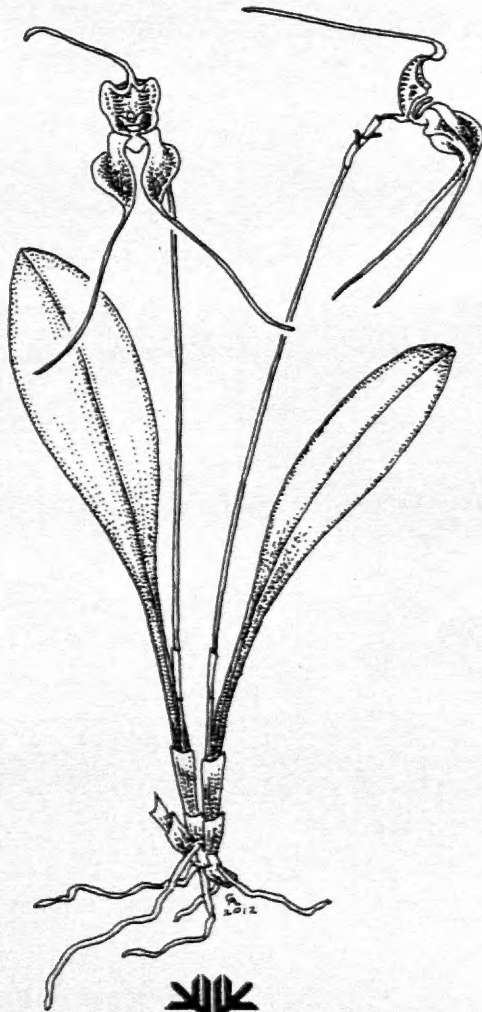


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ICONES PLEUROTHALLIDINARUM
XXV

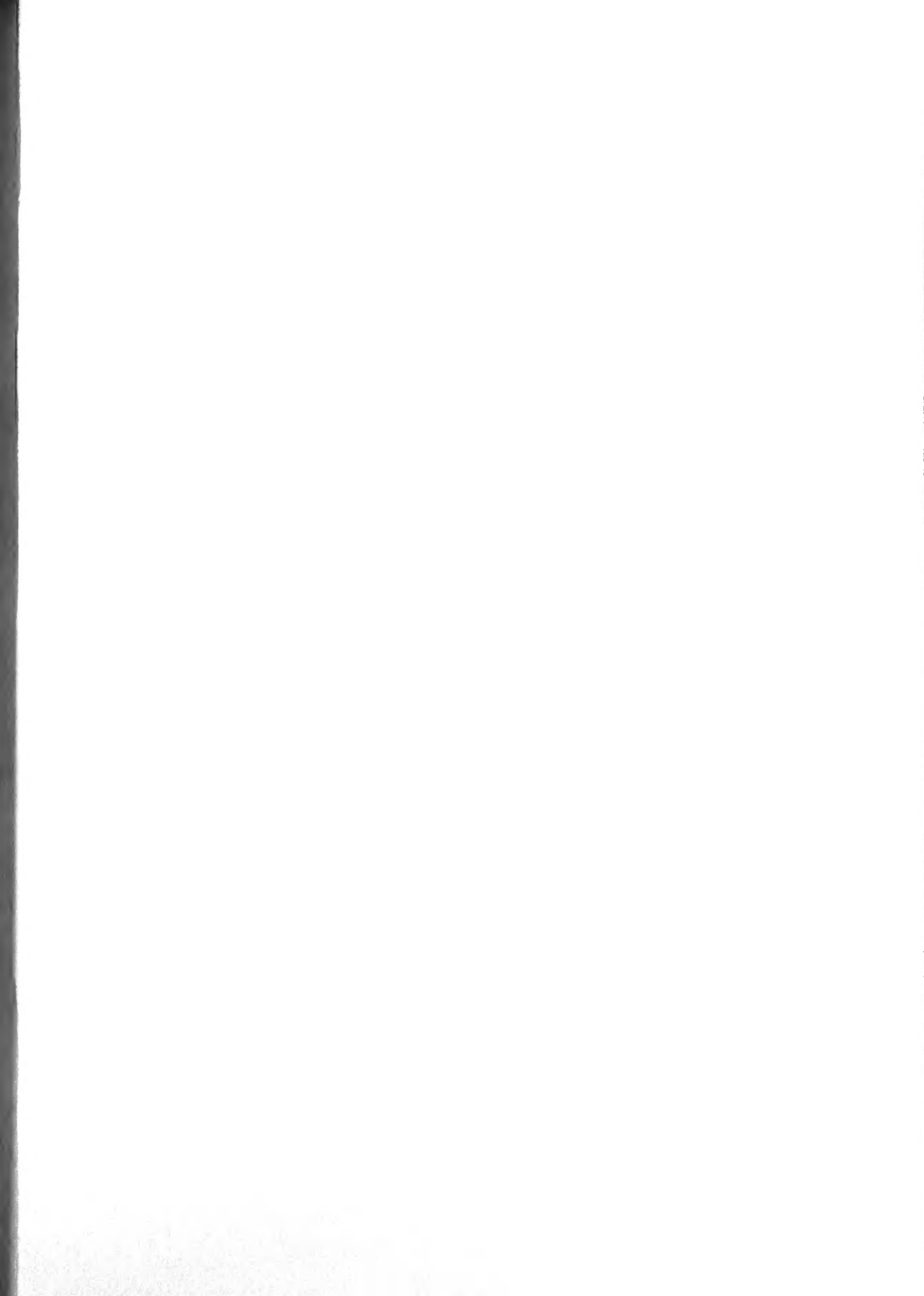
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**SYSTEMATICS
OF
MASDEVALLIA
PART FIVE**



Missouri Botanical Garden





ICONES PLEUROTHALLIDINARUM
XXV

**SYSTEMATICS
OF
MASDEVALLIA
PART FIVE**

M. Subgenus MASDEVALLIA

Section MASDEVALLIA

Subsection COCCINEAE

Section RACEMOSAE

Section TRIOTOSIPHON

M. Subgenus AMANDA

M. Subgenus CUCULLATIA

M. Subgenus FISSIA

M. Subgenus MELEAGRIS

M. Subgenus NIDIFICIA

M. Subgenus SCABRIPES

M. Subgenus TEAGUEIA

M. Subgenus VOLVULA



Missouri Botanical Garden

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Carlyle A. Luer
3222 Old Oak Drive
Sarasota, FL 34239-5019

EDITOR

Victoria C. Hollowell

MANAGING EDITOR

Amy McPherson

ASSOCIATE EDITOR

Diana Gunter

TEXT FORMATTER

Barbara Mack

SENIOR SECRETARY

Aida Kadunic

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FOREWORD

Part-5, with the remaining about 100 species of *Masdevallia*, completes the genus as of today. Additional new species will continue to be published in the same format as in Parts 1 through 4, *Icons* 19, 21, 22, and 23 respectively. Each species will be allotted an individual page or pages, which will be numbered in sequence for insertion into the proper location of the appropriate part.

A few pages from previous parts are reprinted where information has significantly changed, or to correct errors. Altered pages can be discarded, and reprinted pages can be inserted. This maneuver is accomplished simply in loose leaf editions, but care should be taken in removing pages in glue-bound editions. Revisions and addenda follow the final page of the cumulative index, page 1293.

Revisions:

Part-1, page 7 should be replaced with 7¹. Page 8 on the reverse becomes 8¹.

Part-1, *Masdevallia trochilus* Linden & André, page 195¹, to replace 195, and page 197¹ to replace page 197.

Part-4, *Masdevallia saltatrix* Rchb.f., page 1031¹, to replace page 1031; and

Masdevallia ventricularia Rchb.f., page 1039¹, to replace page 1039.

(Due to an oversight, the illustrations for *Masdevallia saltatrix* and *Masdevallia ventricularia* were transposed.)

New species in the text of Part-5:

Masdevallia milagroii Luer & Hirtz, sp. nov.

Masdevallia segrex Luer & Hirtz, sp. nov.

Additional species for Part-1:

Masdevallia ametroglossa Luer & Hirtz, sp. nov., page 29a, to precede page 29.

Masdevallia loui Luer & Dalström, sp. nov., page 113a, to precede page 113.

Masdevallia plynophora Luer, sp. nov., page 149a, to precede page 149.

Masdevallia rechingeriana Kraenzl., page 159a, to precede page 159.

Masdevallia rolandorum Luer & Sijm, sp. nov., page 165a, to precede page 165.

Masdevallia anomala Luer & Sijm, sp. nov., page 227a, to precede page 227.

Additional species for Part-2:

Masdevallia eburnea Luer & Maduro, sp. nov., page 409a, to precede page 410.

Masdevallia gloriae Luer & Maduro, sp. nov., page 413a, to precede page 413.

Additional species for Part-3:

Masdevallia strumosa P.Ortiz & E.Calderón, page 679a, to precede page 679.

Additional species for Part-4:

Masdevallia acaroi Luer & Hirtz, sp. nov., page 789a, to precede page 789.

Masdevallia stigii Luer & Jost, sp. nov., page 895a, to precede page 895.

Abbreviations of the names of authors are in accordance with the recommendations in *Authors of Plant Names*, R.K. Brummit and C.E. Powell, Royal Botanic Gardens, Kew, 1992.

Acronyms of the names of herbaria are in accordance with *Index Herbariorum, Part I: Herbaria of the World*, Eighth Edition, P.K. Holmgren, N.H. Holmgren, and Lisa C. Barnett, New York Botanical Garden, 1990.

Abbreviations of the names of publications follow the recommendations in *Botanico-Periodicum-Huntianum* (BPH), G.H.M. Lawrence, A.F.G. Buchheim, G.S. Daniels, and H. Dolezal, Hunt Botanical Library, Pittsburgh, PA, 1968.

All illustrations in all five parts have been selected from a large accumulation of evolving styles made over a 28-year period. The illustrations inked by Stig Dalström since 1992 bear his initial-logo beneath my initials as the illustrator.



SYSTEMATICS
OF
MASDEVALLIA
PART FIVE

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Masdevallia veitchiana growing among Inca ruins above Macchu Pichu Sanctuary, Cuzco, Peru, altitude ca. 3000 meters above sea level, photographed by Stig Dalström, December 2001.

SUBSECTION *COCCINEAE*

Masdevallia subgenus **Masdevallia** section **Masdevallia** subsection **Coccineae**
Veitch, Man. Orchid. Pl. 5: 18, 1889.

Type: *Masdevallia coccinea* Linden ex Lindl., Orch. Lindl. 5, 1846.

Ety.: From the Latin *coccineus*, "deep red to crimson," referring to the color of the flowers.

Syn.: *Masdevallia* sect. *Coccineae* Woodward, The Genus *Masdevallia* sect. 2, 1896.

Type: *Masdevallia coccinea* Linden ex Lindl.

The species of this subsection, native to the Andes of Colombia, Ecuador and Peru, are some of the largest and showiest of the genus. From the other subsections of section *Masdevallia*, subsection *Coccineae* is distinguished by single, brightly colored flowers with a comparatively narrow, sepaline tube, beyond which the lateral sepals are variously connate into a widely expanded lamina that is longer than the tube. The petals, lip and column are located deep within the tube. The petals are callous along the labellar margin with a simple, basal process. The lip is oblong and simple. Unusual deviations include *M. deformis* with a spiculate margin of the lip, and *M. rosea* subsp. *echinata* with a spiculate apex of the lip. This subsection contains about a dozen species, some of which are not too closely related.

BINOMIALS PUBLISHED IN *MASDEVALLIA* ATTRIBUTABLE TO
SUBSECTION *COCCINEAE*
(excluding "subvarieties" and "forms")

- M. amabilis** Rchb.f. & Warsz.Plates 540, 541, 542, 543.
M. amabilis var. *lineata* hort. = **M. amabilis**
- M. barlaeana** Rchb.f.Plate 544.
- M. boddaertii** Linden ex André = **M. ignea**
- M. coccinea** Linden ex Lindl.Plates 545, 546, 547.
M. coccinea var. *acanthifolia* Bull ex Sander = **M. coccinea** *M. coccinea* var. *lindenii* André = **M. coccinea**
M. coccinea var. *armeniaca* B.S.Williams = **M. coccinea** *M. coccinea* var. *longiflora* Cogn., not Kraenzl. = **M. coccinea**
M. coccinea var. *atropurpurea* hort. ex Sander = **M. coccinea** *M. coccinea* var. *luteo-oculata* hort. ex Sander = **M. coccinea**
M. coccinea var. *atrosanguinea* B.S.Williams = **M. coccinea** *M. coccinea* var. *magnifica* hort. ex Sander = **M. coccinea**
M. coccinea var. *Bull's Blood* hort. ex Sander = **M. coccinea** *M. coccinea* var. *mars* hort. ex Sander = **M. coccinea**
M. coccinea var. *coerulescens* B.S.Williams = **M. coccinea** *M. coccinea* var. *maxima* hort. ex Sander = **M. coccinea**
M. coccinea var. *conchiflora* Rchb.f. ex Veitch = **M. coccinea** *M. coccinea* var. *meteor* hort. ex Sander = **M. coccinea**
M. coccinea var. *decora* B.S.Williams = **M. coccinea** *M. coccinea* var. *miniata* B.S.Williams = **M. coccinea**
M. coccinea var. *denisoniana* hort. ex Sander = **M. coccinea** *M. coccinea* var. *oculata* hort. ex Sander = **M. coccinea**
M. coccinea var. *denisonii* Dombrain = **M. coccinea** *M. coccinea* var. *purpurea* hort. ex Sander = **M. coccinea**
M. coccinea var. *flambeau* hort. ex Sander = **M. coccinea** *M. coccinea* var. *regalis* hort. ex Sander = **M. coccinea**
M. coccinea var. *flammea* hort. ex Sander = **M. coccinea** *M. coccinea* var. *rosea* hort. ex Sander = **M. coccinea**
M. coccinea var. *formosa* hort. ex Sander = **M. coccinea** *M. coccinea* var. *rotundiflora* hort. ex Sander = **M. coccinea**
M. coccinea var. *gemma* hort. ex Sander = **M. coccinea** *M. coccinea* var. *sanguinea* hort. ex Sander = **M. coccinea**
M. coccinea var. *gloriosa* hort. ex Sander = **M. coccinea** *M. coccinea* var. *splendens* Sander = **M. coccinea**
M. coccinea var. *grandiflora* Linden = **M. coccinea** *M. coccinea* var. *versicolor* Veitch = **M. coccinea**
M. coccinea var. *illustris* Linden ex Sander = **M. coccinea** *M. coccinea* var. *violacea* hort. ex Sander = **M. coccinea**
M. coccinea var. *ilacina* Linden ex Sander = **M. coccinea** *M. coccinea* var. *walkeriana* hort. ex Sander = **M. coccinea**
- M. coccinea** Regel, not Linden ex Lindl. = **M. ignea**
- M. davisii** Rchb.f.Plate 548.
- M. deformis** Kraenzl.Plate 549.
- M. denisonii** Dombrain = **M. coccinea**
- M. echinata** Luer = **M. rosea** subsp. *echinata*
- M. exaltata** Luer = **M. deformis**Plate 550.
- M. flammula** H.Mohr & Braas = **M. amabilis**

- M. harryana* Rchb.f. = *M. coccinea***
M. harryana var. *acanthifolia* Bull. = *M. coccinea*
M. harryana var. *alba-maculata* hort. ex Warner = *M. coccinea*
M. harryana var. *armeniaca* B.S. Williams = *M. coccinea*
M. harryana var. *atrosanguinea* B.S. Williams = *M. coccinea*
M. harryana var. *carnea* L. Linden = *M. coccinea*
M. harryana var. *coerulescens* hort. ex B.S. Williams = *M. coccinea*
M. harryana var. *conchiflora* Bull. = *M. coccinea*
M. harryana var. *decora* B.S. Williams = *M. coccinea*
M. harryana var. *denisoniana* hort. = *M. coccinea*
M. harryana var. *grandiflora* B.S. Williams = *M. coccinea*
M. harryana var. *gravesiae* hort. = *M. coccinea*
- M. idae* Luer & Arias** Plate 551.
- M. ignea* Rchb.f.** Plates 552, 553.
M. ignea var. *aurantiaca* B.S. Williams = *M. ignea*
M. ignea var. *boddaertii* Linden ex André = *M. ignea*
M. ignea var. *boddaertiana* Linden = *M. ignea*
M. ignea var. *citrina* hort. ex Stein = *M. ignea*
M. ignea var. *coccinea* hort. ex Stein = *M. ignea*
M. ignea var. *goorii* hort. ex Sander = *M. ignea*
M. ignea var. *grandiflora* B.S. Williams = *M. ignea*
M. ignea var. *hobartii* hort. ex Stein = *M. ignea*
M. ignea var. *marshalliana* Rchb.f. = *M. ignea*
- M. lindenii* André = *M. coccinea***
M. lindenii var. *grandiflora* Linden = *M. coccinea*
M. lindenii var. *harryana* André, = *M. coccinea*
M. longiflora Cogn. = *M. coccinea*
M. longiflora var. *lindenii* André ex Kraenzl. = *M. coccinea*
M. militaris Rchb.f. & Warsz. = *M. coccinea*
- M. niesseniae* Luer** Plate 554.
M. Xparlatoreana Rchb.f. = *M. Xsplendida*
M. purpurina Schltr. = *M. amabilis*
- M. rosea* Lindl.** Plate 555.
***M. rosea* subsp. *echinata* (Luer & Andreetta) Luer** Plate 556.
***M. Xsplendida* Rchb.f.** Plates 557, 558.
Masdevallia indeterminate Plate 559.
***M. stumplei* Braas** Plate 560.
***M. veitchiana* Rchb.f.** Plate 561.
M. veitchiana var. *biflora* Rchb.f. = *M. veitchiana*
M. veitchiana var. *grandiflora* B.S. Williams = *M. veitchiana*
- XDracuvallia* Memoria Maria Arcila** Plate 562.
M. venusta Schltr., no illustration available Page 1052.
***M. welischii* Luer** Plate 563.
- M. harryana* var. *illustris* Linden = *M. coccinea*
M. harryana var. *imperialis* Burbidge = *M. coccinea*
M. harryana var. *kegeljani* Linden = *M. coccinea*
M. harryana var. *laeta* Rchb.f. = *M. coccinea*
M. harryana var. *lilacina* Linden = *M. coccinea*
M. harryana var. *maculata* hort. ex Warner = *M. coccinea*
M. harryana var. *miniata* B.S. Williams & T. Moore = *M. coccinea*
M. harryana var. *regalis* Bull. = *M. coccinea*
M. harryana var. *reginae* Linden = *M. coccinea*
M. harryana var. *rosea* hort. ex Warner = *M. coccinea*
M. harryana var. *sanguinea* hort. = *M. coccinea*
M. harryana var. *splendida* hort. = *M. coccinea*
M. harryana var. *versicolor* T. Moore = *M. coccinea*

KEY TO THE SPECIES OF SUBSECTION *COCCINEAE*

- 1 Sepaline tube 7-12 mm long.....2
 1' Sepaline tube more than 14 mm long.....6
- 2 Lateral sepals red-orange, acute, acuminate, short-tailed.....3
 2' Lateral sepals red, with the apices rounded with 1 mm long tails.....5
- 3 Lip constricted in anterior third, barely 7 mm long.....*M. venusta*
 3' Lip not constricted in anterior third, 4.5 mm long.....4
- 4 Ramicaul 2-5 cm long; petiole of leaf ca. 2 cm long; lateral sepals connate ca. 10 mm.....*M. stumpfleii*
 4' Ramicaul 5-7 cm long; petiole of leaf ca. 4 cm long; lateral sepals connate ca. 18 mm.....*M. idae*
- 5 Lip pubescent, shortly lacerate.....*M. deformis*
 5' Lip glabrous, not lacerate.....(*subsp. exaltata*)
- 6 Lateral sepals with the apices acuminate or acute, with or without tails.....7
 6' Lateral sepals more or less obtuse, contracted into short tails.....14
- 7 Lateral sepals tailless, with the apices acute, acuminate.....8
 7' Lateral sepals caudate, with the apices acute, with tails.....9
- 8 Sepals red-orange, the dorsal sepal with the tail deeply decurved.....*M. ignea*
 8' Sepals variously colored, the dorsal sepal with the tail recurved, erect, or directed forward.....*M. coccinea*
- 9 Sepals usually bright rose, the dorsal sepal with the tail decurved.....10
 9' Sepals variously colored, the dorsal sepal with the tail suberect to erect.....11
- 10 Lip with the apex thin, smooth, decurved with a callus.....*M. rosea*
 10' Lip with the apex thick, echinate.....*M. rosea* subsp. *echinata*
- 11 Sepals yellow, the dorsal sepal broadly obtuse.....*M. niesseniae*
 11' Sepals variously colored, the dorsal sepal acute.....12
- 12 Sepals red-orange, with purple capitate hairs.....*M. veitchiana*
 12' Sepals variously colored, without capitate hairs.....13
- 13 Sepals red-orange, often striped.....*M. amabilis*
 13' Sepals purple to white.....(*M. purpurina*)
- 14 Sepals bright orange with purple hairs on the dorsal sepal.....*M. welischii*
 14' Sepals not bright orange with purple hairs on the dorsal sepal.....15
- 15 Sepals yellow, with tails of lateral sepals less than 5 mm long.....*M. davisii*
 15' Sepals crimson, with tails of lateral sepals more than 10 mm long...*M. barlaeana*

Masdevallia venusta

One of the reasons that subsection *Coccineae* had been delayed until Part-5 of *Systematics of Masdevallia* was the hope that *M. venusta* would reappear. It was described by Schlechter in 1921 from a collection by Weberbauer from the Andean slopes east of Huancabamba in northern Peru. This specimen was lost in the destruction of the Berlin-Dahlem herbarium in 1944. No duplicate material is known, and no known subsequent collection matches the description.

In botanical literature the epithet *venusta* first appeared merely in a list of plants made from several sales catalogues. Schlechter used the epithet to describe formally the beautiful, terrestrial species collected by Weberbauer. In the *Orchids of Peru*, Schweinfurth included *M. coccinea*, listing *M. venusta* in the synonymy. The following description was made from Schlechter's published description. No illustration is known.

Masdevallia venusta Schltr., Repert. Spec. Nov. Regni Veg. Beih. 9: 62, 1921.

Ety.: From the Latin *venustus*, "beautiful," for the beauty of the flowers.

Plant medium in size to large, terrestrial, caespitose. Ramicauls erect, abbreviated, single-leaved, with a short sheath. **Leaf** erect, elliptical-oblong, obtuse, with a petiole 3.5-7 cm long, apparently 3-veined, the blade 6-9 cm long, 2.5-3 cm wide near the middle. **Inflorescence**: peduncle solitary, very slender, single-flowered, 13-25 cm long, floral bract closely clasping, half as long as the pedicel; flower large for the section, beautiful, bright crimson (coccineus); **sepals** glabrous, connate into a narrow, bell-shaped tube 8 mm long, the dorsal sepal lanceolate, very acuminate into the tail, 5 cm long including the tail, the lateral sepals expanded forward, obliquely oblong-lanceolate, subfalcate, very acuminate with short tails, 4.5 cm long, 1.1 cm wide near the middle; **petals** obliquely oblong, obtuse, the lower margin at the base dilated into a decurved lobule, 6 mm long; **lip** oblong-ligulate, strongly obtuse, subconspicuously constricted in the anterior third, the base slightly narrowed, with the lateral nerves slightly thickened toward the base, barely 7 mm long; **column** 5.5 mm long, the clinandrium denticulate, the foot incurved, 2 mm long; ovary cylindrical, glabrous, 5 mm long, the pedicel barely about 1 cm long.

PERU: **Cajamarca**: east side of the cordillera east of Huancabamba, alt. 2400-2500 m, Apr. 1912, A. Weberbauer 6111 (Holotype destroyed at B).

This species apparently has not been collected since the original collection by Weberbauer nearly a century ago in northern Peru. Both *M. idae* and *M. stumpflei* from much farther south in Peru are similar to *M. venusta* in many ways, but a few discrepancies in the descriptions indicate that probably neither is the same.

In common, the flowers of all three could be called "coccineus." All three have sepaline tubes proportionately shorter than those of their relatives, the lateral sepals of all three terminate acuminate with short tails, and all three have petals six millimeters long with a thick, incurved process at the base. The longer lip of *M. venusta* is slightly constricted in the anterior third, while the lips of *M. idae* and *M. stumpflei* are shorter, oblong, and not constricted.



Masdevallia amabilis Rchb.f. & Warsz., *Bonplandia* 2: 116, 1854.

Ety.: From the Latin *amabilis*, "beautiful," referring to the beauty of the flowers.

Syn.: *Masdevallia amabilis* var. *lineata* Linden, Rev. Hort. Belge, t. 25, 1883.

Ety.: From the latin *lineatus*, referring to the yellowish sepals striped with purple.

Syn.: *Masdevallia purpurina* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 9: 61, 1921.

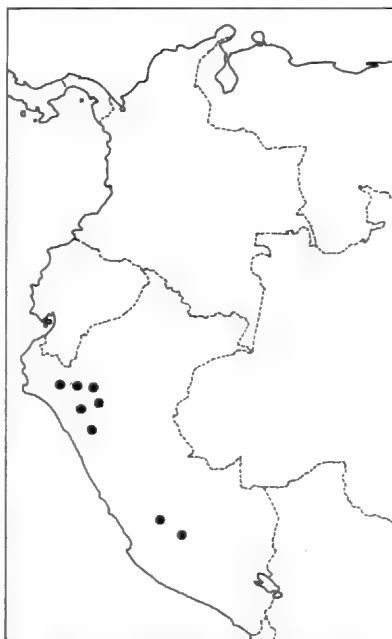
Ety.: From the Latin *purpurinus*, "purple," referring to the flower.

Syn.: *Masdevallia flammula* H.Mohr & Braas, Die Orchidee 35: 141, 1984.

Ety.: From the Latin *flammula*, "a little flame," referring to the color of the flower.

Plant medium in size to large, terrestrial, caespitose; roots coarse. Ramicauls stout, 2-4.5 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, thickly coriaceous, 5-17 cm long including an indistinct petiole 2-4 cm long, the blade narrowly elliptical, subacute to obtuse, 1.5-2 cm wide, gradually narrowed below into the channeled petiole. **Inflorescence** a solitary, showy flower borne by a relatively slender, erect to reclining or horizontal peduncle, 15-40 cm long, with a bract below the middle, from low on the ramicaul; floral bract 1-1.5 cm long; pedicel 1.5-6 cm long; ovary 0.5-1.5 cm long; **sepals** yellow to yellow-orange, white to purple, glabrous, microscopically pubescent within, the dorsal sepal linear-obovate, acute, acuminate, 2-3 cm long including the acuminate tail 1-3 cm long, 5-13 mm wide at the orifice of the tube, connate 11-28 mm into a narrow, cylindrical, sepaline tube, the lateral sepals more or less obovate, oblique, acute, 4-6 cm long including the tails, connate 20-38 mm into the narrow, sepaline tube below, expanded above into a bifid lamina, 17-33 mm wide, contracted into slender tails 5-15 mm long; **petals** white to light green, often purple at the apex, oblong, 5-10 mm long, 2-3 mm wide, the obtuse apex obscurely lobed, the labellar margin with a longitudinal callus ending in an obtuse, retrorse process above the base; **lip** white to yellow, often suffused with dark purple at the apex, oblong, thin, 4-8.5 mm long, 1.5-3 mm wide, more or less slightly constricted above the middle, the apex obtuse, with a low, marginal callus, the base subtruncate, hinged beneath; **column** white, marked and suffused with purple, semiterete, 3.5-7 mm long, the foot stout, 1-3 mm long with a slender, incurved extension.

PERU: **Cajamarca**: sources of the Marañon, May 1853, *J.R. von Warszewicz s.n.* (Holotype: W; Iso-type: K); collected by Roetzl, cultivated in Zürich, Aug. 1888 and June 1889, *Ortgies s.n.* (K); Hda. La Tshona near Hualgayoc, alt. 3100 m, *A. Weberbauer 4016* (holotype of *M. purpurina* destroyed at B); Celendin, alt. 2950 m, 21 May 1964, *P.C. Hutchison & J.K. Wright 5244* (neotype of *M. purpurina* here designated: AMES; isoneotypes: K, M, MICH, MO, NY, P, UC, USF, USM); Hda. Lluscapampa, terrestrial, alt. 2850 m, 24 Sept. 1967, *I. Sánchez 374* (CPUN, F); among scrubby vegetation east of Celendin, alt. ca. 2800 m, Aug. 1980, *W. Königer, H. Königer, C. Luer, J. Luer & M. Arias K-53* (SEL); Cutervo, between Llama and Huambos, alt. 2600-2900 m, 21 Apr. 1988, *C. Díaz & S. Baldeón 2876* (MO); Chota, Samangay pass between Bambamarca and Chota, alt. 2800 m, 5 Dec. 1990, *I. Sánchez 5371* (CPUN, F); between Celendin and Balsas, alt. 2800 m, 14 Apr. 1982, *I. Sánchez 2780* (CPUN, MO); Bosque de Lullapuquio, alt. 3150 m, 19 Sept. 1992, *I. Sánchez 6404* (CPUN, F); el Caserío Huacataz, alt. 3000 m, 21 Nov. 1981, *I. Sánchez & E. Medina 2693* (CPUN, MO); San Marcos, Cuenca del Río Shitamalca, terrestrial, alt. 3100 m, 30 Oct. 1982, *I. Sánchez & J. Torres 6423* (CPUN, F, MO). **Amazonas**: Chachapoyas, alt. 2600-2700 m, *A. Weberbauer 4317* (destroyed at B); Luya, alt. 3000 m, collected by D. Welisch, cultivated in San Francisco, CA, 17 Aug. 1979, *C. Luer 4094* (SEL). **Ancash**: Yungay, Huárez, among rocks beside Lago Llanganuco, alt. 3900 m, 28 Sept. 1975, *S.G. Saunders 1292* (AMES); Yungay, Callejón de Hoaylas, Quebrada Llanganuco, alt. 12,000 ft., collected by D. Welisch, June 1974, cultivated in San Francisco, CA, 7 Apr. 1978, *C. Luer 2887* (MO); Yungay, Laguna Llanganuco, alt. 3400 m, 10 Nov. 1984, *A. Sagástegui et al. 12316* (HUT, MO); Yungay, Parque Nacional Huascarán, Quebrada Ranincuray, alt. 3800 m, 12 Jan. 1985,



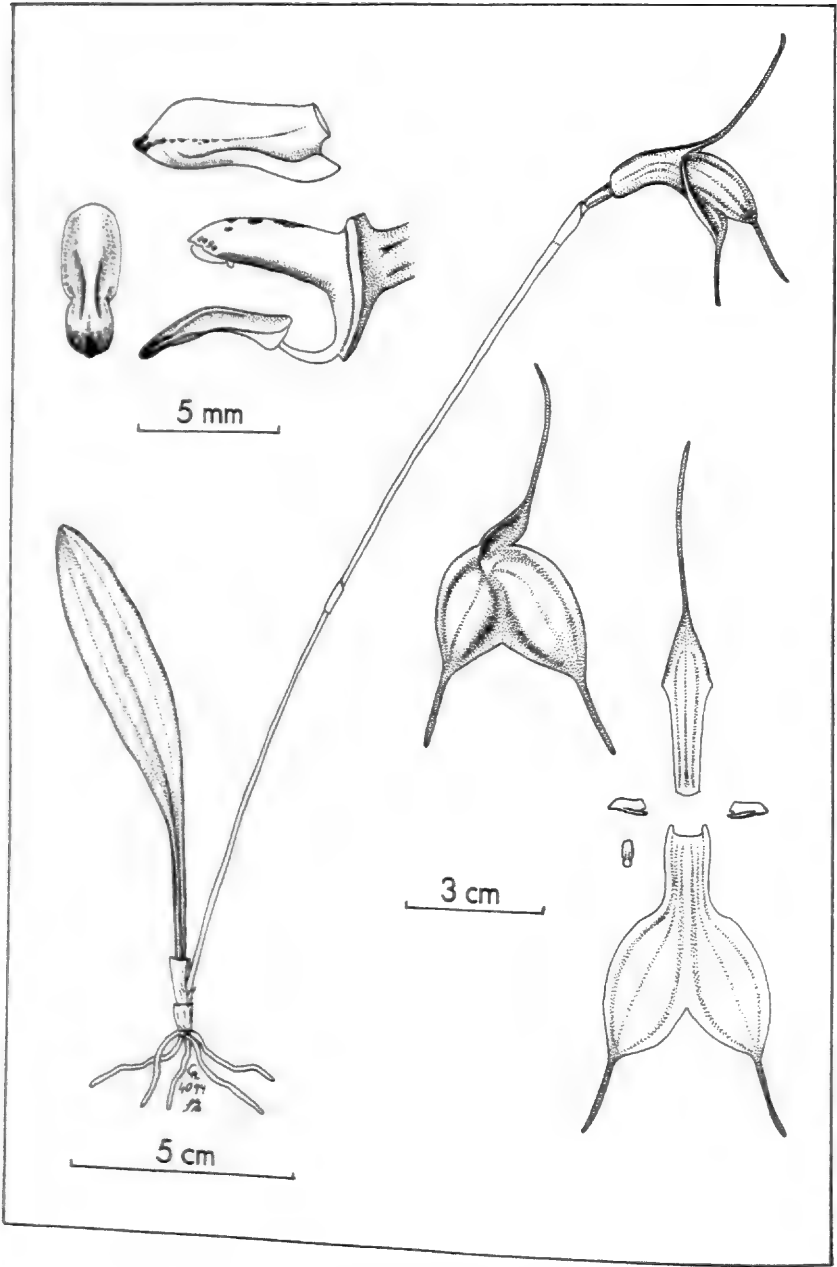


Plate 540. *Masdevallia amabilis*

D.N. Smith & H. Vidaurre 9146 (MO); Huaylas, Alpamayo-Cashapampa trail, alt. 3500-3950 m, 13 Mar. 1985, *D.N. Smith & R. Valencia 10034* (MO); lithophytic near Húaraz, Callejón de Huaylas, alt. 4000 m, Aug. 1979, collected by M. Arias, cultivated in Munich, Germany, by *W. Königler s.n.* (K, M, MO, SEL, USM, W); Húari, terrestrial, alt. 3650 m, collected by M. Arias, Aug. 1978, cultivated by W. Königler in Munich, Germany, May 1980, *C. Luer 5262* (SEL). **Apurímac:** Abancai, Lambrama, Quebrada de Guera, alt. 3050 m, 19 July 1940, *C. Vargas 1995* (AMES); Abancay, alt. 2800 m, 21 Apr. 1953, *J.P. Hjerting & E. Petersen 1455* (C). **Huancavelica:** Andaimarca between Colcabamba and Sur Hierba, alt. 2900 m, 14 Apr. 1954, *O. Tovar 1832* (AMES). **Libertad:** Huamachuco, Laguna Sausacochoa, alt. 3100 m, *A. López & Sagástegui 2867* (AMES, TRUX); Pataz, between Huaylillas and Puerta del Monte, alt. 3100 m, 22 May 1961, *A. López & Sagástegui 3456, 3527* (AMES, TRUX); Sánchez Carrion, between Trujillo and Huamachuco, alt. 3750 m, 14 Feb. 1983, *D.N. Smith & R. Vásquez M. 3329* (MO). **Lambayeque:** Ferreñafe, between Marayhuaca and Piedra Colorada, Uyuypampa, alt. 3000 m, 13 Dec. 1992, *S. Llata Q. 3237* (F, MO). "Ostkordillera," without locality, 1983, *K. Tiller s.n.* (holotype of *M. flammula*: Herb. Mohr).

This species is frequent and variable in size and color. It grows terrestrially and lithophytically on exposed, rocky slopes of the semi-arid, high Andes of northern Peru where it was first collected by the venerable Warszewicz about 1850. Roezl, however, introduced living plants into Europe in 1872. Examples of extremes placed side by side are indeed remarkable, and superficially appear to be distinct species. Larger-flowered specimens are more likely to be bright yellow-orange, while smaller-flowered specimens are more often white or purple, described as *M. purpurina*. However, it is impractical to recognize *M. purpurina* at the specific level, because it is not possible to distinguish the two taxa from each other among the multitude of collections with intermediate variations. Large-flowered variations are the basis for the report of the Colombian *M. coccinea* in Peru. Possibly distant hybridization with other species such as *M. barlaeana* or *M. veitchiana* could account for the larger, more colorful variations. Some specimens are intermediate with *M. barlaeana*. The specimen painted by Miss Woolward for *M. amabilis* in her monograph looks very much like *M. splendida*, the natural hybrid between *M. barlaeana* and *M. veitchiana*.

The leaves are narrow and thick, typical of species growing terrestrially in exposed, semi-arid habitats. The long, more or less flexible, slender peduncle usually reclines with the weight of the flower. Shorter peduncles stand more or less erect. The flowers vary in size, and the color of the sepals varies through all the reds, yellows, and oranges. Yellow or yellow-orange sepals are often striped with red or red-orange. A large, yellow-orange color variation with purple stripes was described by Linden as var. *lineata*. Small specimens called *M. purpurina* vary in color from purple to white. The sepaline tube is slender, and the free portions of the lateral sepals expand into a broad, bifid lamina with short tails. Some specimens appear deceptively similar to the Ecuadorian *M. rosea*.

The callus along the lower margin of the petals terminates in varying degrees. A short, more or less acute point is often replaced by a thick, incurved process, without regard to the size and color of the flower.

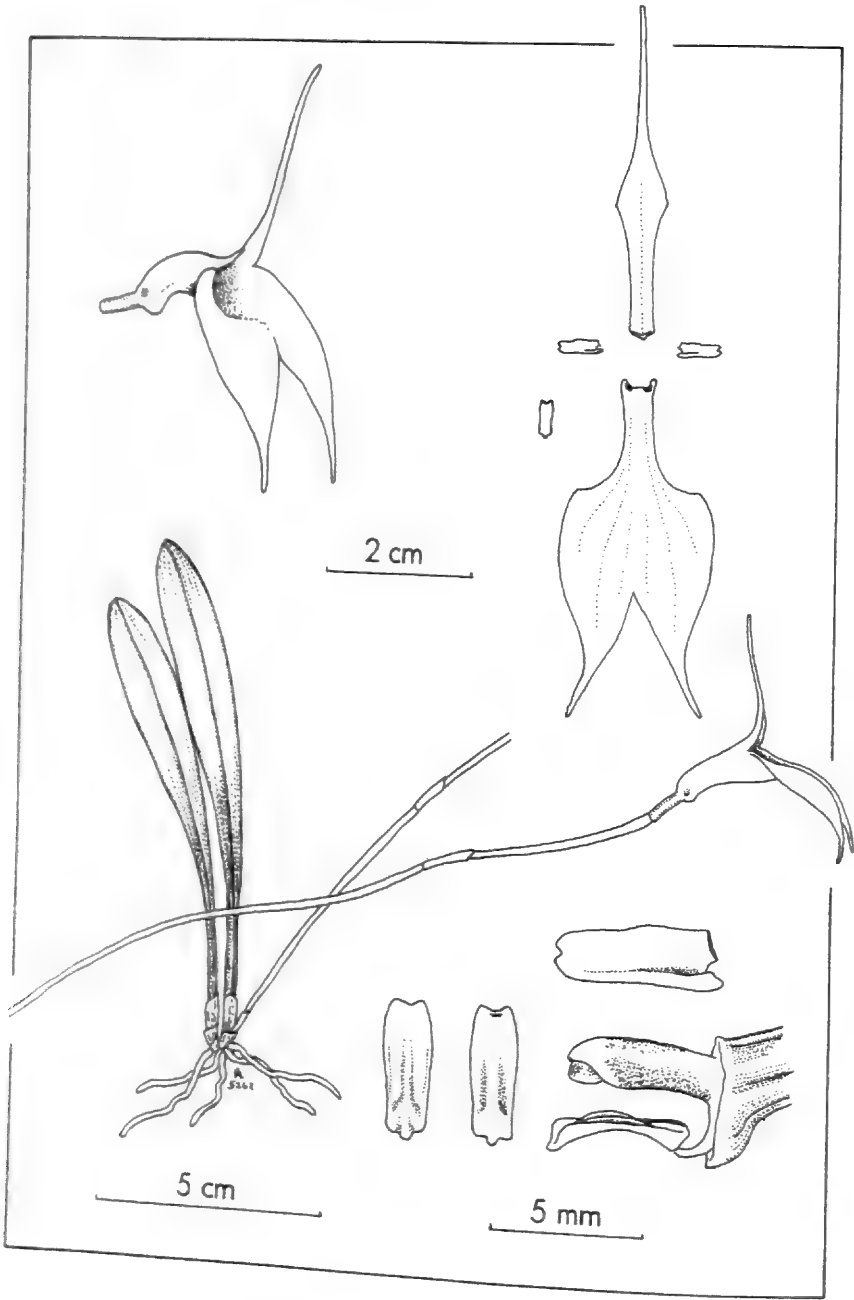


Plate 541. *Masdevallia amabilis*

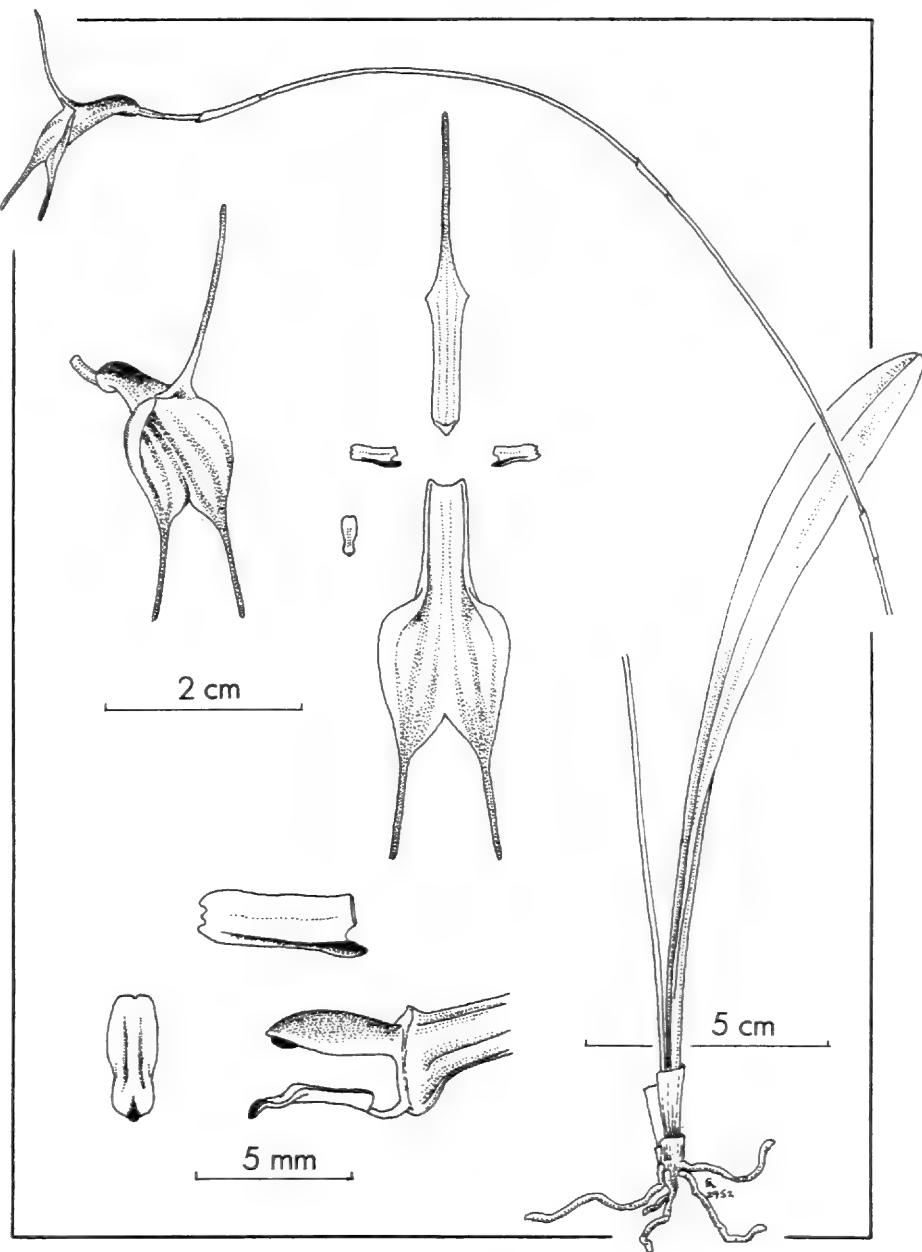


Plate 542. *Masdevallia amabilis*
(*Masdevallia purpurina*)

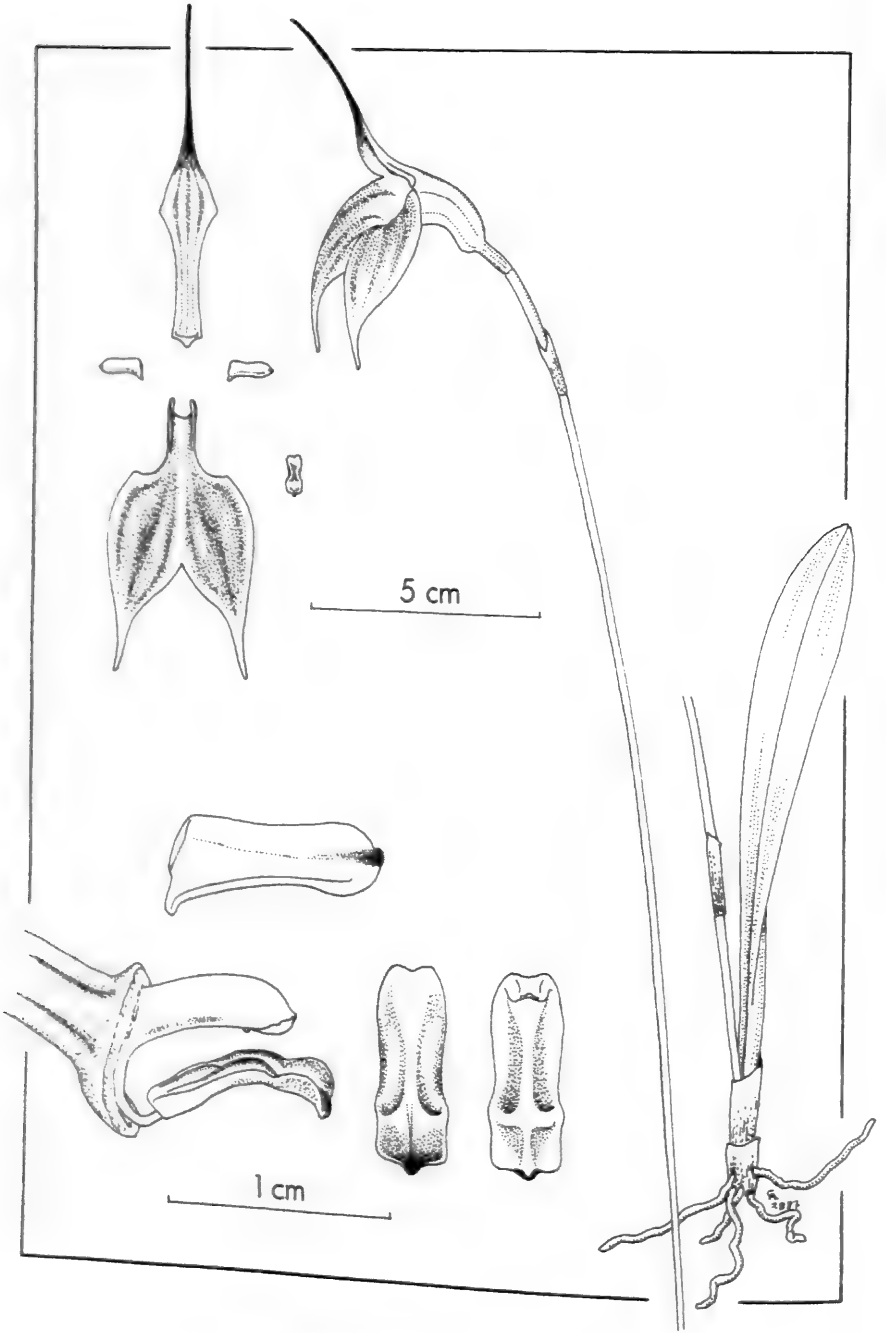


Plate 543. *Masdevallia amabilis*

Masdevallia barlaeana Rchb.f., Gard. Chron. 5(1): 170, 1876.

Ety.: Named in honor of J.E. Barla Esq., botanist and orchidologist, Consul of Brazil and director of the Museum of Natural History, Nice, France.

Plant medium in size, terrestrial, caespitose to shortly repent; roots coarse. Ramicauls stout, 2-5 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, thickly coriaceous, 5-13 cm long including an indistinct petiole 2-4 cm long, the blade narrowly elliptical, subacute to obtuse, 1.5-2.2 cm wide, gradually narrowed below into the channeled petiole. **Inflorescence** a solitary, showy flower borne by a relatively slender, erect to reclining or horizontal peduncle, 15-20 cm long, with a bract below the middle, from low on the ramicaul; floral bract 1-1.5 cm long; pedicel 2-4 cm long; ovary 1-1.5 cm long; **sepals** bright red-purple, to red, suffused or veined in darker red or purple, microscopically pubescent within, the dorsal sepal linear-obovate, 20-22 mm long, 5 mm wide at the orifice of the tube, connate to the lateral sepals for 15 mm into a narrow, cylindrical, sepaline tube, the apex rounded, abruptly contracted into a slender, purple tail 2.5-3 cm long, the lateral sepals more or less obovate, oblique, 30-35 mm long, connate 25-27 mm into the narrow, sepaline tube below, expanded above into a bifid lamina, 26-28 mm wide, with the apices obtuse, contracted into slender tails 12-14 mm long; **petals** white, oblong, 6 mm long, 2 mm wide, the apex truncate, trilobed, the labellar margin with a longitudinal callus ending in a short, obtuse process at the base; **lip** white, suffused with rose at the apex, oblong, thin, 5.5 mm long, 2 mm wide, slightly sulcate centrally, the apex obtuse, with a low, marginal callus, the base subtruncate, hinged beneath; **column** white, semiterete, 5 mm long, the foot stout, 1-2 mm long with a slender, in-curved extension.

PERU: **Cuzco**: without locality, W. Davis s.n. (Holotype: W); Urubamba, Lemcaypata-Sta. Rita, alt. 2200-2800 m, 28 Mar. 1942, C. Vargas 2658 (CUZ, MO); Urubamba, Salapunco, alt. 2900 m, C. Vargas 5988 (AMES, CUZ, UC); terrestrial between Cuzco and Machu Picchu, C. Vargas s.n. (CUZ); near Peñas, alt. 3600 m, Jan. 1980, cultivated by Königer W-18, B. Würstle & M. Maier s.n. (K). **Apurimac**: Andahuaylas, quebrada north of Chincheros, sides of rocky cliffs, alt. 2800 m, 27 Feb. 1939, H.E. Stork & O.B. Horton 10767 (UC). Without locality, Don Richardson W-275, cultivated by M. & O. Robledo at La Ceja, Oct. 1977, C. Luer 2287 (SEL).



Masdevallia barlaeana was discovered around 1875 by Walter Davis while collecting plants of *M. veitchiana* for Messrs. Veitch. Apparently limited in distribution to the high altitudes of southeastern Peru, it is closely allied to the frequent and widely distributed *M. amabilis* that occurs at high altitudes from northern to southern Peru. Both species occur in similar, exposed, rocky habitats. The red-orange color of the flowers of *M. barlaeana* is distinctive, but the two are often difficult to distinguish. The apices of the lateral sepals are obtuse instead of acute and acuminate as in *M. amabilis*, and the tails are shorter. Also, the angle between the blades of the lateral sepals is obtuse instead of acute. The morphology of the petals and lip of the two species is essentially the same.

Hybridization between the two must also occur. Where *M. barlaeana* grows in company with *M. veitchiana*, the hybrid *M. Xsplendida* occurs.

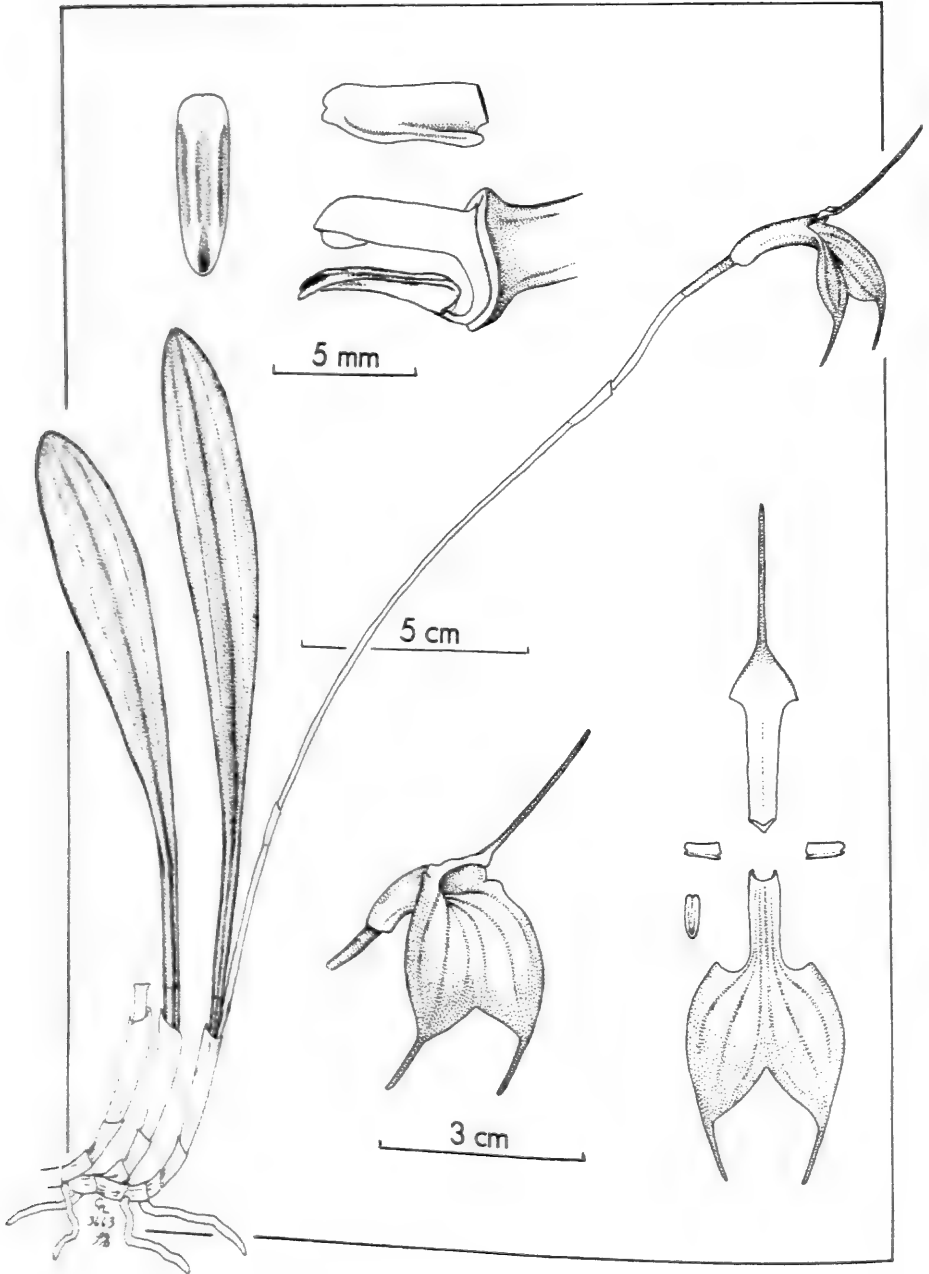


Plate 544. *Masdevallia barleana*

Masdevallia coccinea Linden ex Lindl., *Orchidaceae* *Lindeniana* 5, 1846.

Ety.: From the Latin *coccineus*, "a bright, deep red color," referring to color of the flowers.

Syn.: *Masdevallia militaris* Rchb.f. & Warsz., *Bonplandia* 2: 115 et 283, 1854.

Ety.: From the Latin *militaris*, "of the military," in allusion to the bright red flowers.

Syn.: *Masdevallia lindenii* André, *Ill. Hort.* 17: 226, t. 42, 1870.

Ety.: Named in honor of Jean Linden of Ghent, Belgium, discoverer of this species, and in whose establishment it flowered for the first time in Europe.

Syn.: *Masdevallia coccinea* var. *lindenii* André, *Ill. Hort.* 17: 266, 1870.

Syn.: *Masdevallia harricana* Rchb.f., *Gard. Chron.* 1421, 1871.

Ety.: Named in honor of Sir Harry James Veitch who cultivated this species.

Syn.: *Masdevallia harricana* var. *sanguinea* hort., *Gard. Chron.* 1: 751, 1877.

Ety.: From the Latin *sanguineus*, "blood red," referring to the color of the flowers.

Syn.: *Masdevallia harricana* var. *coerulescens* Bull, *Cat. new t.* 83, 1877.

Ety.: From the Latin *coerulescens*, "becoming blue," referring to the color of the flowers.

Syn.: *Masdevallia harricana* var. *laeta* Rchb.f., *Gard. Chron.* n.s. 11: 716, 1879.

Ety.: From the Latin *laetus*, "bright," in allusion to the color of the flower.

Syn.: *Masdevallia lindenii* var. *harricana* André, *Ill. Hort.* 20: 167, t. 142, 1873.

Syn.: *Masdevallia harricana* var. *denisoniana* hort., *Fl. Serres* 19: 129, 1873.

Syn.: *Masdevallia denisonii* Dombrain, *Fl. Mag.* n.s. t. 79, 1873.

Ety.: Named for a Mr. Denison who cultivated this species.

Syn.: *Masdevallia coccinea* var. *versicolor* Veitch, *Gard. Chron.* 16: 306, 1881.

Ety.: From the Latin *versicolor*, "of various colors," in allusion to the colors of the flowers.

Syn.: *Masdevallia coccinea* var. *coerulescens* B.S. Williams, *Orchid Album* 1. t. 24, 1882.

Ety.: From the Latin *coerulescens*, "becoming blue," referring to the color of the flower.

Syn.: *Masdevallia harricana* var. *acanthifolia* Bull, *Cat.* 14, 1883.

Ety.: Probably named for a similarity of the leaf to a member of the Acanthinae.

Syn.: *Masdevallia harricana* var. *conchiflora* Bull, *Cat.* 14, 1883

Ety.: From the Latin *conchiflora*, "conch- or clam-shaped," in allusion to the shape of the flower.

Syn.: *Masdevallia harricana* var. *regalis* Bull, *Cat.* 14, 1883.

Ety.: From the Latin *regalis*, "royal, fine," referring to the choice flowers.

Syn.: *Masdevallia coccinea* var. *atrosanguinea* B.S. Williams, *Orchid Album* 3: t. 105, 1884.

Ety.: From the Latin *atrosanguineus*, "dark blood-red," referring to the color of the flower.

Syn.: *Masdevallia coccinea* var. *miniata* B.S. Williams & T. Moore, *Orch. Alb.* 3: t. 110, 1884.

Ety.: From the Latin *miniatus*, "flame-scarlet," in allusion to the color of the flower.

Syn.: *Masdevallia lindenii* var. *grandiflora* Linden, *Lindeniana* 1: 73, t. 34, 1885.

Ety.: From the Latin *grandiflorus*, "large-flowered," referring to the size of the flower.

Syn.: *Masdevallia coccinea* var. *armeniaca* B.S. Williams, *Orchid Album* 5: t. 224, 1886.

Ety.: From the Latin *armeniacus*, "apricot-colored," in allusion to the color of the flower.

Syn.: *Masdevallia coccinea* var. *decora* B.S. Williams, *Orchid Album* 8: t. 344, 1889.

Ety.: From the Latin *decorus*, "beautiful, becoming," in allusion to the color of the flower.

Syn.: *Masdevallia coccinea* var. *conchiflora* (Rchb.f.) Veitch, *Man. Orch. Pl.* 5: 34, 1889.

Syn.: *Masdevallia coccinea* var. *harricana* (Rchb.f.) Veitch, *Man. Orch. Pl.* 5: 34, 1889.

Syn.: *Masdevallia coccinea* var. *splendens* Sander, *Reichenbachia* 2(1): t. 26, 1891.

Ety.: From the Latin *splendens*, "splendid," in allusion to the flowers.

Syn.: *Masdevallia harricana* var. *imperialis* Burbidge, *Florist & Pomol* 90, 1882.

Ety.: From the Latin *imperialis*, "imperial, regal," referring to fine qualities of the flower.

Syn.: *Masdevallia harricana* var. *kegeljani* Linden, *Lindeniana* 8: 95, t. 382, 1893.

Ety.: Probably named for the grower or owner Kegeljan.

Syn.: *Masdevallia harricana* var. *lilacina* Linden, *Lindeniana* 8: 95, t. 382, 1893.

Ety.: From the Latin *lilacinus*, "lilac-colored," referring to the color of the flower.

Syn.: *Masdevallia harricana* var. *carnea* Linden, *Lindeniana* 8: 95, t. 382, 1893.

Ety.: From the Latin *carneus*, "flesh colored," referring to the color of the flower.

Syn.: *Masdevallia harricana* var. *reginae* Linden, *Lindeniana* 8: 95, t. 382, 1893.

Ety.: From the Latin *regina*, "queen," referring to queen-like properties of the flower.

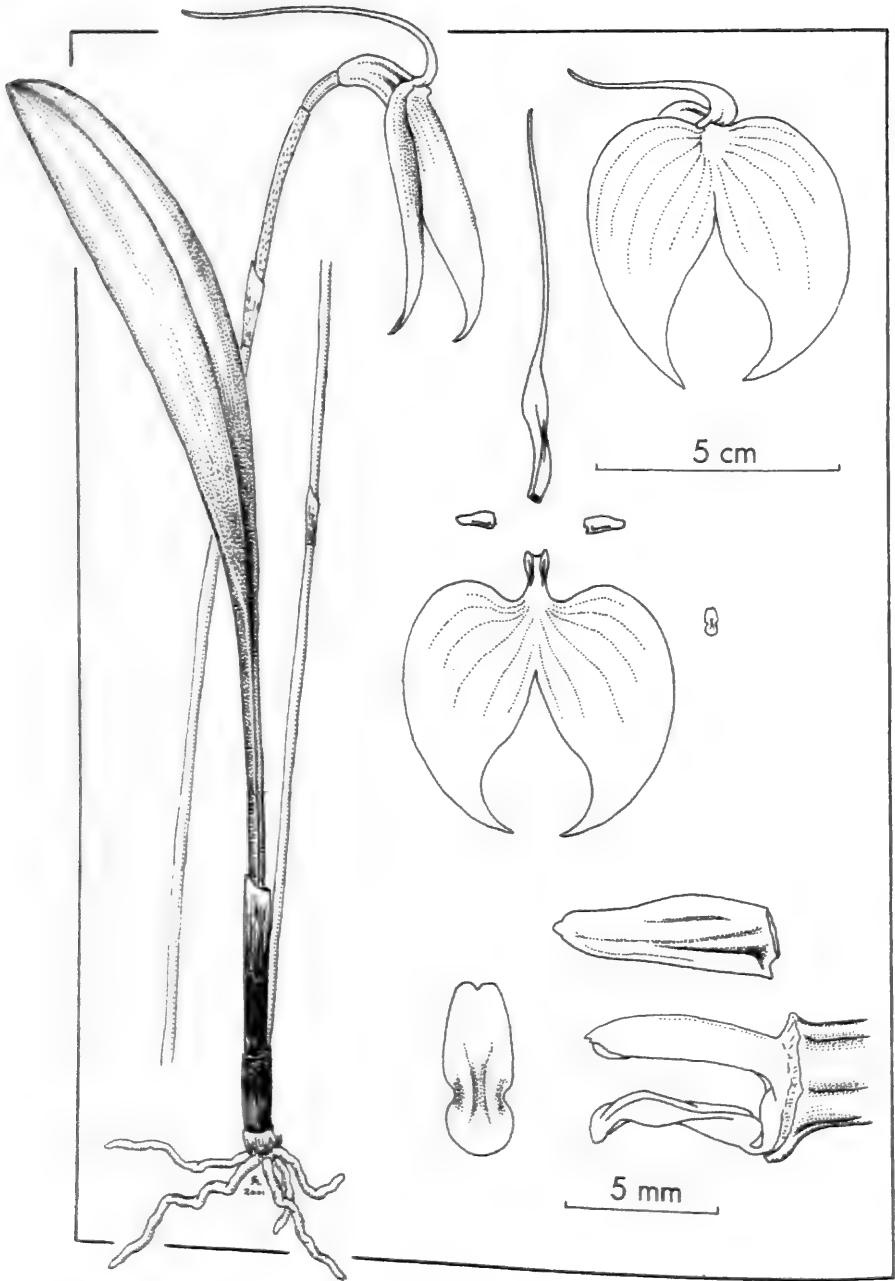


Plate 545. *Masdevallia coccinea*

Syn.: *Masdevallia harr yana* var. *illustris* Linden, *Lindenia* 8: 95, t. 382, 1893.

Ety.: From the Latin *illustris*, "bright, lustrous," referring to fine qualities of the flower.

Additional "varieties" of *Masdevallia harr yana* listed by Williams (B.S and H. Williams, 1894):

Syn.: *M. harr yana* var. *alba-maculata* hort. ex R. Warner, *Orch. Grow. Man.* 491, 1894.

Syn.: *M. harr yana* var. *armeniaca* B.S. Williams, *Orch. Grow. Man.* 491, 1894.

Syn.: *M. harr yana* var. *atrosanguinea* B.S. Williams, *Orch. Grow. Man.* 491, 1894.

Syn.: *M. harr yana* var. *decora* B.S. Williams, *Orch. Grow. Man.* 491, 1894.

Syn.: *M. harr yana* var. *denisoniana* hort., *Orch. Grow. Man.* 491, 1894.

Syn.: *M. harr yana* var. *grandiflora* B.S. Williams, *Orch. Grow. Man.* 492, 1894.

Syn.: *M. harr yana* var. *gravesiae* hort., *Orch. Grow. Man.* 491, 1894.

Syn.: *M. harr yana* var. *maculata* hort. ex R. Warner, *Orch. Grow. Man.* 492, 1894.

Syn.: *M. harr yana* var. *rosea* hort. ex R. Warner, *Orch. Grow. Man.* 492, 1894.

Syn.: *M. harr yana* var. *versicolor* T. Moore, *Orch. Grow. Man.* 492, 1894.

Syn.: *Masdevallia harr yana* var. *longiflora* Cogn., *Dict. Icon. Orch. Mas.* t. 7a., 1899.

Ety.: From the Latin *longiflorus*, "with long flowers," referring to a variation of the flower.

Additional "varieties" listed by Sander (Sander, 1901):

Syn.: *M. coccinea* var. *acanthifolia* Bull ex Sander, *Orch. Guide* 110, 1901.

Syn.: *M. coccinea* var. *atropurpurea* hort. ex Sander, *Orch. Guide* 110, 1901.

Syn.: *M. coccinea* var. *Bull's Blood* hort. ex Sander, *Orch. Guide* 110, 1901.

Syn.: *M. coccinea* var. *denisoniana* hort. ex Sander, *Orch. Guide* 110, 1901.

Syn.: *M. coccinea* var. *flambeau* hort. ex Sander, *Orch. Guide* 110, 1901.

Syn.: *M. coccinea* var. *flammea* hort. ex Sander, *Orch. Guide* 110, 1901.

Syn.: *M. coccinea* var. *formosa* hort. ex Sander, *Orch. Guide* 110, 1901.

Syn.: *M. coccinea* var. *gemma* hort. ex Sander, *Orch. Guide* 110, 1901.

Syn.: *M. coccinea* var. *gloriosa* hort. ex Sander, *Orch. Guide* 110, 1901.

Syn.: *M. coccinea* var. *illustris* Linden ex Sander, *Orch. Guide* 111, 1901.

Syn.: *M. coccinea* var. *lilacina* Linden ex Sander, *Orch. Guide* 111, 1901.

Syn.: *M. coccinea* var. *luteo-oculata* hort. ex Sander, *Orch. Guide* 111, 1901.

Syn.: *M. coccinea* var. *magnifica* hort. ex Sander, *Orch. Guide* 111, 1901.

Syn.: *M. coccinea* var. *mars* hort. ex Sander, *Orch. Guide* 111, 1901.

Syn.: *M. coccinea* var. *maxima* hort. ex Sander, *Orch. Guide* 111, 1901.

Syn.: *M. coccinea* var. *meteor* hort. ex Sander, *Orch. Guide* 111, 1901.

Syn.: *M. coccinea* var. *oculata* hort. ex Sander, *Orch. Guide* 111, 1901.

Syn.: *M. coccinea* var. *purpurea* hort. ex Sander, *Orch. Guide* 111, 1901.

Syn.: *M. coccinea* var. *regalis* hort. ex Sander, *Orch. Guide* 111, 1901.

Syn.: *M. coccinea* var. *rosea* hort. ex Sander, *Orch. Guide* 111, 1901.

Syn.: *M. coccinea* var. *rotundiflora* hort. ex Sander, *Orch. Guide* 111, 1901.

Syn.: *M. coccinea* var. *sanguinea* hort. ex Sander, *Orch. Guide* 111, 1901.

Syn.: *M. coccinea* var. *violacea* hort. ex Sander, *Orch. Guide* 111, 1901.

Syn.: *M. coccinea* var. *walkeriana* hort. ex Sander, *Orch. Guide* 111, 1901.

Syn.: *Masdevallia ignea* var. *militaris* (Rchb.f. & Warsz.) ex Sander *Orch. Guide* 113, 1901.

Syn.: *Masdevallia longiflora* (Cogn.) Kraenzl., *Bot. Jahrb.* 37: 383, 1906.

Syn.: *Masdevallia longiflora* var. *lindenii* André ex Kraenzl., *Repert. Spec. Nov. Regni Veg. Beih.* 34: 27, 1925.

Plant large, terrestrial, shortly repent to caespitose; roots slender. Ramicauls stout, erect, 5-10 long, enclosed by 2-3 tubular sheaths. **Leaf** erect, thickly coriaceous, 10-30 cm long including the indistinct petiole 4-8 cm long, the blade narrowly elliptical-obovate, 1.2-3 cm wide, the apex subacute to obtuse, gradually narrowed below into the base. **Inflorescence** a large, solitary, showy flower borne by a stout, erect peduncle 25-60 cm tall, with a bract below the middle, from near the base of a ramicaul; floral bract 1.5-2.5 cm long; pedicel 1.5-6 cm long; ovary 6-14 mm long; **sepals** ranging in color from purple to red, orange and white, essentially glabrous, the dorsal sepal narrowly obovate, 25-40 mm long, 6-10 mm wide, connate to the lateral sepals for 15-23 mm to form a curved, cylindrical tube, the free portion triangular, acute, produced into a slender, usually reflexed tail 3-5 cm long, the lateral sepals oblique, broadly falcate, 45-60 mm long, connate 25-28 mm into a broad, bifid lamina 26-70 mm wide, the apices acute, acuminate, incurved; **petals** white, oblong, 6.5-10 mm long, 2.5-3 mm wide, the apex obtuse, obscurely apiculate to tridentate, the labellar margin with a longitudinal callus ending in a short, retrorse tooth at the base; **lip** white to yellow, sometimes suffused with rose, oblong-subpandurate, 6-9 mm long, 2.5-3.5 mm wide, the disc with a low pair of longitudinal calli near the middle, the apex rounded, the base subcordate, hinged below; **column** white to yellow-white, semiterete, 6-9 mm long, the foot 2 mm long with a short, incurved extension.

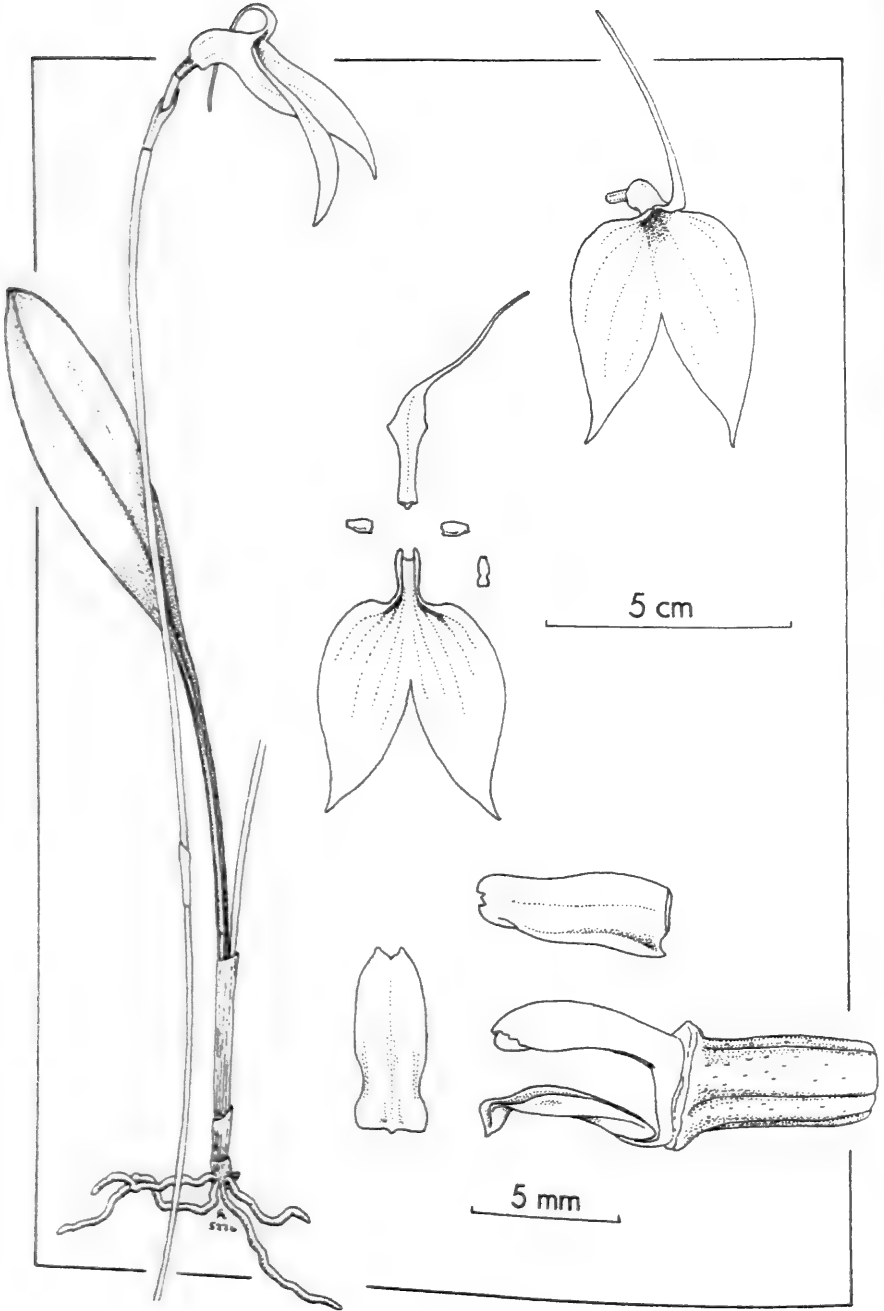


Plate 546. *Masdevallia coccinea*

COLOMBIA: **Santander**, Old Dept. of Ocaña: terrestrial on the southern slopes of the high mountains near Pomplona, alt. 9,500 ft., April 1843, *J. Linden 1262* (Holotype: K; Isotypes: BR, W); Cachirí, alt. 9,000 ft., 1846-52, *L. Schlim 411* (W); terrestrial in oak woods between Cachirí and the pass, alt. 2500 m, 21 May 1982, *C. Luer, R. Escobar & D. Portillo 7804* (AMES, SEL); near Ocaña, alt. 8,000-10,000 ft., 1846-52, *L. Schlim 1164* (B, BR, W); terrestrial between Pomplona and La Baja, 1847, *L. Schlim 1180* (B, BR, P); same area, Jan. 1847, alt. 8,900 ft., *L. Schlim 1437* (BM, BR, G, LE, P, W); Ocaña, *B. Roetzl s.n.* (W); without locality, *Warszewicz s.n.* (painting, type of *M. militaris*: W); near California, alt. 2000 m, 11 Jan. 1927, *E.P. Killip & A.C. Smith 17691* (AMES, NY); terrestrial in oak forest, north slope above Cachirí, alt. 2500 m, 21 May 1982, *C. Luer, R. Escobar & D. Portillo 7904* (SEL, MO). **Norte de Santander**: terrestrial on the road embankment north of La Laguna, alt. 2850 m, 8 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10183* (MO). **Boyacá**: Paramo de Pisba, 2800-3000 m, 9 May 1937, *J. Renz 3606* (BAS); Sierra Nevada del Cocuy, 8 Nov. 1957, *P.J. Grubb, Curry & Fernandez-Perez 388* (K); terrestrial in thin woods above Guicán, alt. 3100 m, 27 May 1982, *C. Luer, R. Escobar & D. Portillo 7980* (SEL); along a stream above San Pablino, alt. 3600 m, 30 May 1982, *C. Luer, R. Escobar & D. Portillo 7984, 7985* (MO, SEL). **Cundinamarca**: Zipaquirá near Sta. Bárbara, 26 June 1883, *F.C. Lehmann 2465* (G). Without collection data, cultivated by *Harry James Veitch s.n.* (holotype of *M. harryana*: W). Without collection data, peduncle 2-flowered, cultivated in Brandon, FL, 19 Sept. 1995, by *D. Dukes & W. Thoms s.n.* (MO).



Masdevallia coccinea is widely distributed in the Eastern Cordillera of Colombia where it remains locally abundant in spite of a century of relentless exploitation. It was first discovered by a European in the old department of Ocaña about 1841 when Jean Linden made one of his voyages to the New World in search of orchids for the trade. However, it was not until 1870, after plants were rediscovered by Wallis in 1867, that it flowered for the first time in Europe. This species immediately became a horticultural prize in great demand for the large, colorful flowers, and for hybridization. Various shapes and color-variations were highly sought by hobbyists and horticulturists, and many cultivars were given names as varieties. "Variety" *grandiflora* was cultivated in St. Petersburg, Russia, in May 1888.

While some populations are stable in the color of the flowers, others are extremely labile, producing numerous shades and tints. The colors vary from bright red-purple to rose, pale rose, or pure white. Rarely, yellow variations are produced, and prior to the recent re-introduction of *M. davisii*, these variations were sometimes sold for that rare species.

A variation with bright, military-red flowers, collected and painted by Warszewicz, was described by Reichenbach as *M. militaris*. The tail of the dorsal sepal points forward, not sharply reflexed as it is in the typical forms. However, it is not decurved between the lateral sepals as it is in the smaller, usually bright orange flowers of *M. ignea*. Colonies with flowers exactly fitting those in Warszewicz's painting have been found at high altitudes in the Eastern Cordillera of Colombia.

Rarely, a second flower of *M. coccinea* will be produced simultaneously on a 10-centimeter-long proliferation of the peduncle, and even with a bud beyond that. During the post World War II years, Helmuth Schmidt-Mumm amassed a great collection of all variations of colors, shapes and sizes in his growing areas near Bogotá, Colombia. Many plants of this collection are cultivated today by John Leathers in cool, coastal California.

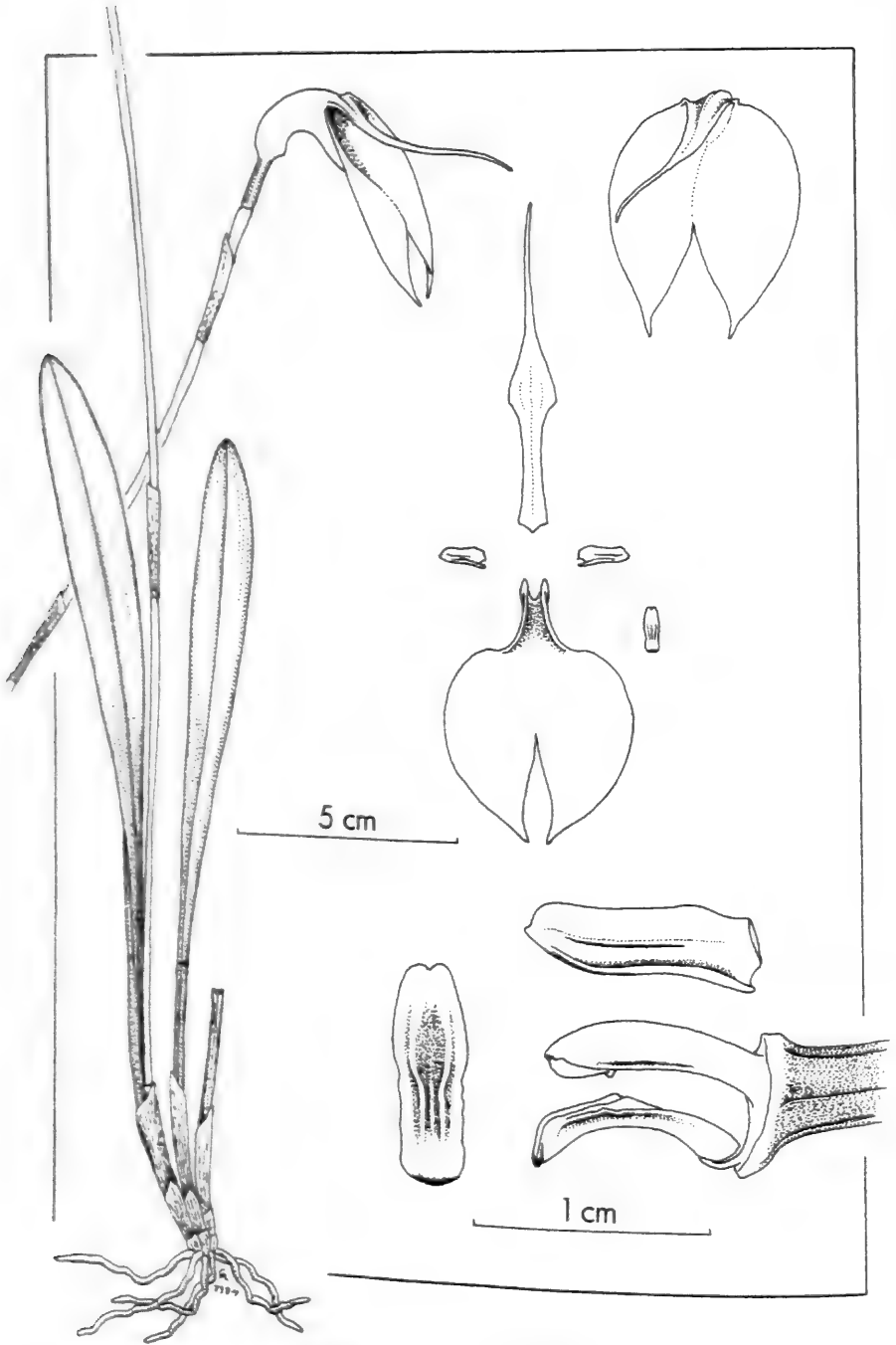


Plate 547. *Masdevallia coccinea*
(*Masdevallia militaris*)

Masdevallia davisii Rchb.f., Gard. Chron. 2: 710, 1874.

Ety.: Named in honor of Walter Davis, the collector who discovered this species.

Plant medium in size to large, terrestrial or lithophytic, caespitose; roots slender. Ramicauls stout, erect, 3-6 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, thickly coriaceous, 10-18 cm long including an indistinct petiole 1-3 cm long, the blade narrowly elliptical-obovate, 1.5-2 cm wide, the apex subacute, gradually narrowed below into the subpetiolate base. **Inflorescence** a large, solitary, showy flower borne by an erect peduncle 18-25 cm long, with a bract below the middle, from near the base of a ramicaul; floral bract 1.5-2 cm long; pedicel 4-5 cm long; ovary 1 cm long; **sepals** bright yellow or yellow-orange, with a brown spot at the base, glabrous, the dorsal sepal obovate, 25 mm long, 15 mm wide, connate to the lateral sepals for 15 mm to form a curved, cylindrical tube, the free portion triangular, subacute, contracted into a slender, erect, greenish tail 2 cm long, the lateral sepals connate 30 mm into a broadly elliptical-oblong, bifid, shallowly concave lamina 45 mm long, 35 mm wide, the apices subacute to obtuse, contracted into slender tails 4 mm long; **petals** yellow-white, oblong, 8 mm long, 3 mm wide, the rounded apex obscurely bilobulate, the labellar margin with a longitudinal callus ending in a short, retrorse process at the base; **lip** yellow, marked with red-brown above the middle, oblong-subpandurate, 7 mm long, 2.5 mm wide, the disc shallowly sulcate between a low pair of longitudinal calli near the middle, the apex obtuse with a midline callus, the base subtruncate, hinged below; **column** yellow-white, semiterete, 6.5 mm long, the foot 2 mm long with a short, incurved extension.

PERU: **Cuzco?**: without locality, 1873, cultivated in Aug. 1874 by Messrs. J. Veitch at Chelsea, England, *W. Davis s.n.* (Holotype: W; Isotype: K); prov. of Urubamba, east of Cuzco, alt. ca. 3000 m, collected by Santiago, Oct. 1978, flowered in cultivation 15 Aug. 1979 by D. Welisch in San Francisco, CA, *C. Luer 4084* (SEL); terrestrial in rocky terrain near Río Ocobamba, Veronica Mts., cultivated by Königler W-15a, alt. 3600 m, Jan. 1980, *B. Würstle & W. Maier s.n.* (K, M, USM, W, Herb. H. Königler); same collection, cultivated by B. Würstle at Spielberg, Germany, 22 Sept. 1981, *C. Luer 6515* (MO).



This prized species is locally abundant where it grows on fully exposed rocky slopes at high altitudes in southeastern Peru. It was first discovered at an undisclosed locality by Walter Davis, a collector sent by the firm of Veitch to collect *M. veitchiana* for the trade. In spite of many plants being exported to Europe, they eventually disappeared in cultivation, no further importations having been made. It was a "lost" species that became increasingly desirable as cultivation of Masdevallias became popular once again.

Yellow color-variations of *M. coccinea* were commonly sold for *M. davisii*. It was rediscovered in 1978 by David Welisch of San Francisco and independently in 1980 by Berthold Würstle of Spielberg, Germany.

The bright yellow flowers are borne high above the thick leaves that betray the semi-arid habitat. A broad, golden synsepal expands beyond the sepaline tube. The tail of the dorsal sepal is about as long as the blade, but the tails of the lateral sepals are very short. The petals and lip are similar to those of the other species of the subsection *Coccineae*.

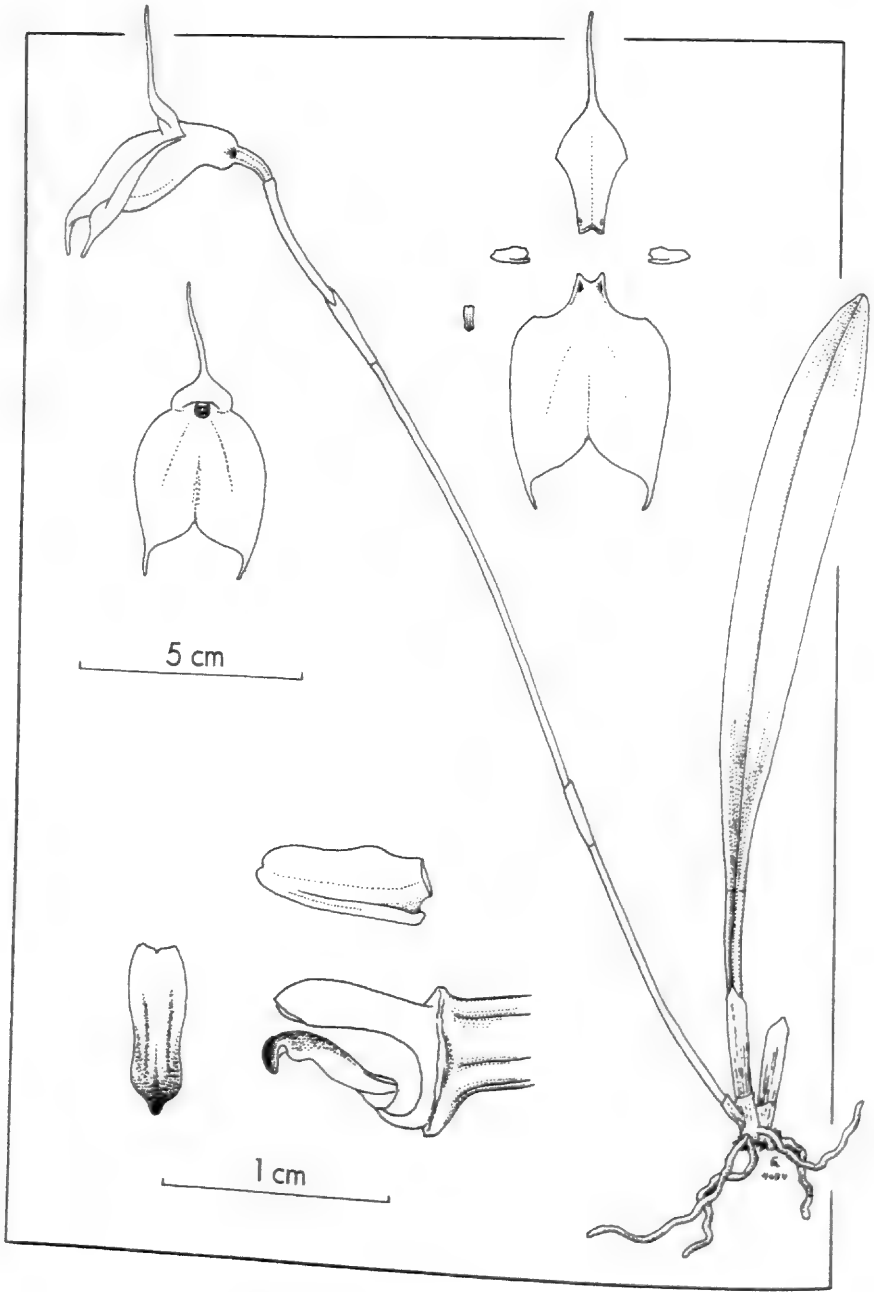


Plate 548. *Masdevallia davisii*

Masdevallia deformis Kraenzl., *Repert. Spec. Nov. Regni Veg.* 17: 428, 1921.

Ety.: From the Latin *deformis*, "deformed, misshapen," for the disproportionately large size of the flower as compared to the plant.

Syn.: *Masdevallia exaltata* Luer, *Selbyana* 7: 108, 1982.

Ety.: From the Latin *exaltatus*, "exalted," referring to superior qualities of the plant as compared to the misnomer "*deformis*."

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls blackish, erect, slender, 1.5-4.5 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** dark green, sometimes mottled with dark greenish purple or black, erect to suberect, coriaceous, petiolate, 4-10 cm long including the petiole 2-4.5 cm long, the blade elliptical, subacute to obtuse, 1-2.4 cm wide, cuneate below into the blackish petiole. **Inflorescence** a solitary, showy flower borne by a horizontal, ascending, or erect, slender peduncle 4-10 cm long, with a bract below the middle, from low on the ramicaul; floral bract tubular, 6-8 mm long; pedicel 8-11 mm long; ovary 5 mm long; **sepals** red-vermilion, glabrous, the dorsal sepal oblong, 12-17 mm long, 5-6 mm wide, connate to the lateral sepals for 8 mm to form a cylindrical tube, the free portion triangular, the acute apex contracted into a slender, forwardly directed tail 15-23 mm long, the lateral sepals oblong-elliptical above the narrowly cylindrical tube, more or less dilated beyond the junction with the dorsal sepal, 30-40 mm long, connate 19-30 mm, 20-27 mm wide together, the rounded apices abruptly contracted into slender tails 1.5-2.5 mm long; **petals** white with a purple midvein, oblong, 7-8 mm long, 2-2.75 mm wide, the apex subtruncate, lightly bilobulate, the labellar margin with a longitudinal carina dotted with purple, ending in an acute, retrorse tooth above the base; **lip** red or orange, narrowly oblong, 7 mm long, 1.25-1.5 mm wide, laterally compressed below the middle, shortly pubescent or glabrous, the margins minutely denticulate to entire, the apex narrowly obtuse to rounded, the disc shallowly channelled between a longitudinal pair of calli, ciliate or glabrous, the base subcordate, 1.5 mm thick, hinged below; **column** white with a purple margin, semiterete, 5-6 mm long, the foot 3 mm long, with a short, incurved extension.

ECUADOR: **Zamora-Chinchipec**: "Cordillera orientalis lojensis," *Hübsch s.n.* (Holotype: W); Cordillera del Condor, Jan. 1972, *M. Fiske s.n.* (AMES); same collection by M. Fiske, cultivated by M. & O. Robledo at La Ceja, Colombia, 27 Sept. 1977, *C. Luer 1848* (SEL); between Loja and Zamora, alt. 2200 m, collected by E. Sánchez, cultivated by A. Andreetta in Cuenca, 19 Nov. 1979, *C. Luer 4805* (SEL); epiphytic in cloud forest above Valladolid, alt. 2450 m, 18 Mar. 1984, *C. Luer, S. Dalström, T. Höjjer, J. Kuiji & D. D'Alessandro 9566* (MO); same area, 23 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 10937* (MO); same area, alt. 2700 m, 4 Apr. 1985, *G. Harling & L. Andersson 23660* (GB). **Loja**: epiphytic in cloud forest north of the pass south of Yangana, alt. 2400 m, 3 Mar. 1982, *C. Luer, A. Andreetta, D. D'Alessandro & S. Dalström 7103* (SEL). **Morona-Santiago**: Cordillera del Condor east of Chuchumbletza, alt. 1750 m, 21 May 1988, *C. Luer, A. Hirtz, W. Flores, A. Andreetta & W. Teague 13542* (K, MO).



This species is local, and sometimes abundant, in the forests of southeastern Ecuador. It was first collected by the collector Hübsch in the "eastern cordillera of Loja," and described from dry, herbarium material by Kränzlin in 1921. He comments that the disproportionate size of the flower caused him to choose the "ill-sounding" name, even though he assumed the flower to be beautiful. Living plants were first collected by the late Milan Fiske in 1972 in the Cordillera del Condor where it has proved not to be rare.

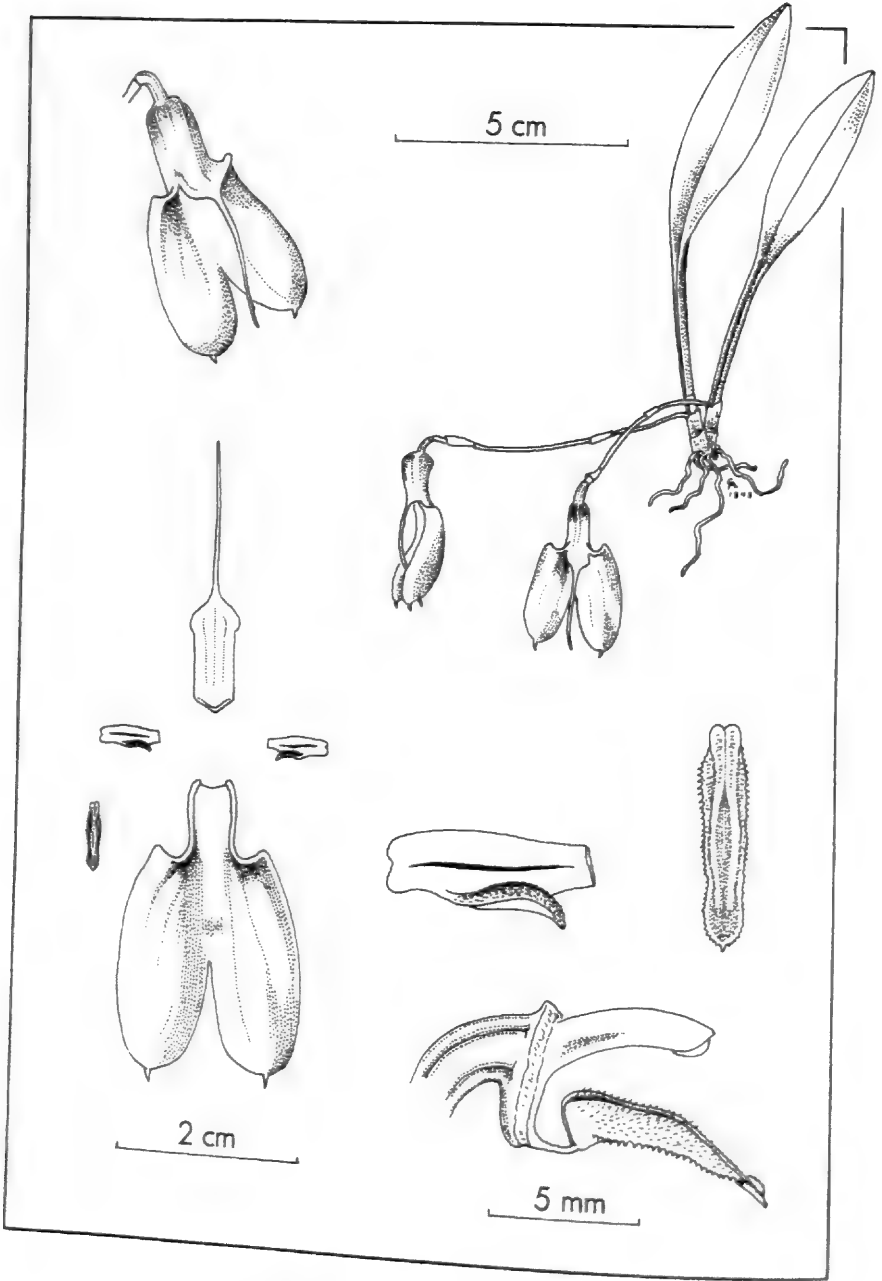


Plate 549. *Masdevallia deformis*

Vegetatively, the plants of *M. deformis* are not remarkably different from most other medium-sized members of the genus, except that the leaves are usually darker green and sometimes mottled with purple-black, especially in those recognized as *M. exaltata*.

The flowers are borne singly, but often several simultaneously on horizontal or drooping peduncles. The sepaline tube is narrow with broadly expanded, bright red or orange lateral sepals with very short tails. The petals have a marginal callus ending in sharp tooth above the base. The lip is narrowly oblong and obtuse with or without minutely ciliated margins. It is shallowly channelled centrally between a pair of low, longitudinal calli.

A population in the mountains of southern Ecuador west of the Cordillera del Condor was discovered in 1982 and recognized as *M. exaltata*. Vegetatively, it is larger with larger flowers borne by longer, more or less erect peduncles. The petals are identical to all others seen. The lip of *M. exaltata* was noted to be smooth, but this character was found to be inconstant within the species, the lips varying in degrees of cilia.

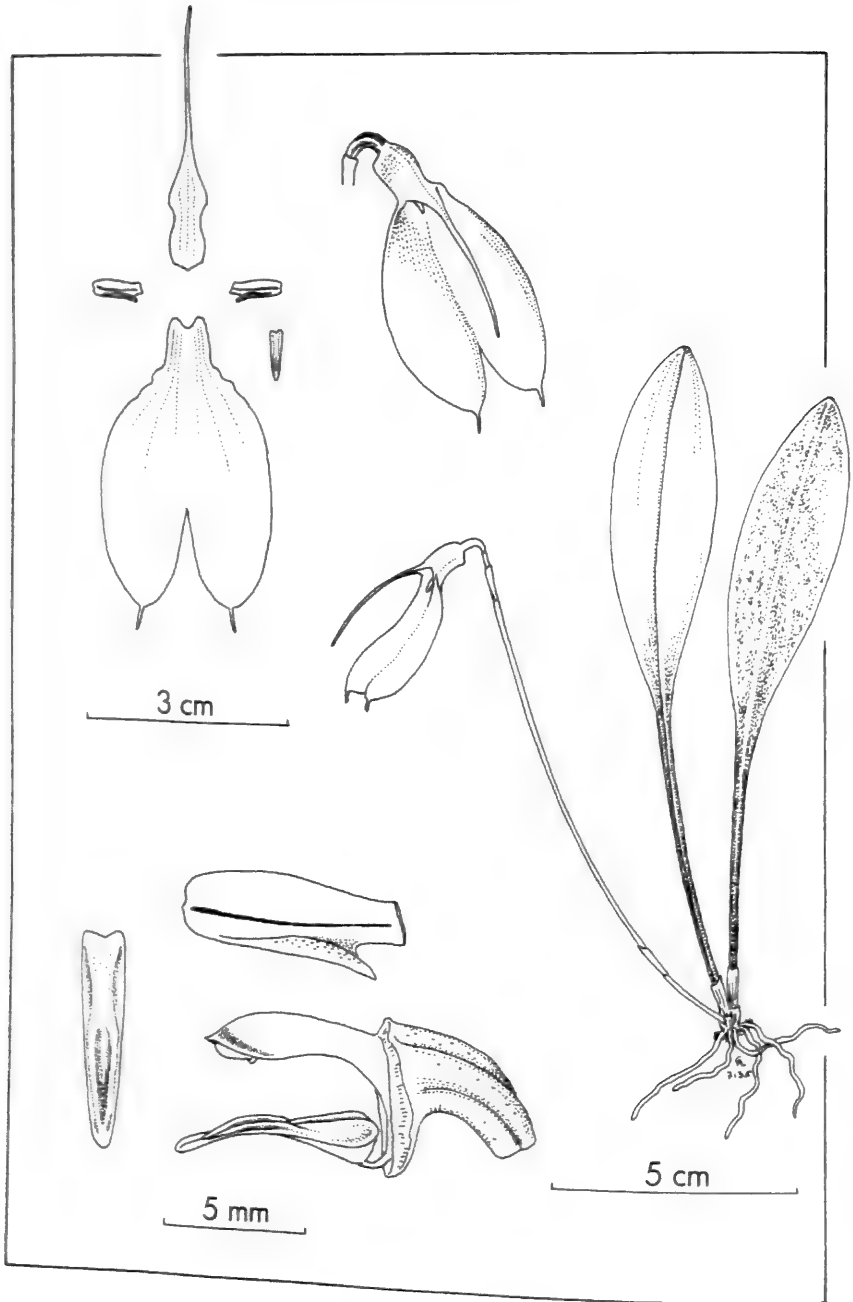


Plate 550. *Masdevallia deformis*
(*Masdevallia exaltata*)

Masdevallia idae Luer & Arias, Monogr. Syst. Bot. Missouri Bot. Gard. 86: A-1, 2001.

Ety.: Named in honor of Sra. Ida Fernandez, first president of the Club Peruano de Orquídeas.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls black, erect, slender, 5-7 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, 9-11 cm long including the petiole ca. 4 cm long, the blade narrowly elliptical, subacute, 1.5-1.8 cm wide, the base narrowly cuneate into the petiole. **Inflorescence** a solitary flower borne by a slender peduncle 13-16 cm long, with a bract near the base, from low on the ramicaul; floral bract thin, tubular, 1.5 cm long; pedicel 3-4 cm long; ovary 4-7 mm long; **sepals** orange, microscopically pubescent within, the dorsal sepal obovate, shallowly concave, ca. 20 mm long, 12 mm wide, 3-veined, connate to the lateral sepals for 7-10 mm to form a sepaline tube, the apex obtuse, acuminate into a slender, red-orange tail ca. 20 mm long, the lateral sepals connate 18 mm into a broad, bifid synsepal, ca. 30 mm long, 25 mm wide, with a mentum below the column-foot, the apices acute, acuminate into tails 6-8 mm long; **petals** white, oblong, slightly curved, 6 mm long, 1.5 mm wide, the apex rounded, the labellar margin with a longitudinal carina ending in a thick, blunt, recurved, retrorse process at the base; **lip** white, oblong, 4.5 mm long, 2 mm wide, the apex rounded, recurved, suffused with purple, the disc featureless, the base truncate, hinged beneath; **column** white, semiterete, 5.5 mm long, slightly uneven at the apex, the foot thick, 2 mm long with an incurved extension.

PERU: **Ayacucho**: Huanta, Pachamanca, epiphytic, alt. 2200 m, collected by Silvano Flores, cultivated in Lima, Sept. 1999, by *M. Arias s.n.* (Holotype: MO), C. Luer illustr. 19362.

Instead of terrestrial as with most other Peruvian members of this subsection *M. idae* is epiphytic. Vegetatively, the plant differs with long-petiolate leaves that are surpassed by the slender peduncle. The orange flower is similar to that of *M. amabilis* with the acute apices of the lateral sepals tapering into short tails. The marginal callus of the petals terminates with a thick, retrorse and incurved process. The oblong lip is smaller than the petals and column.



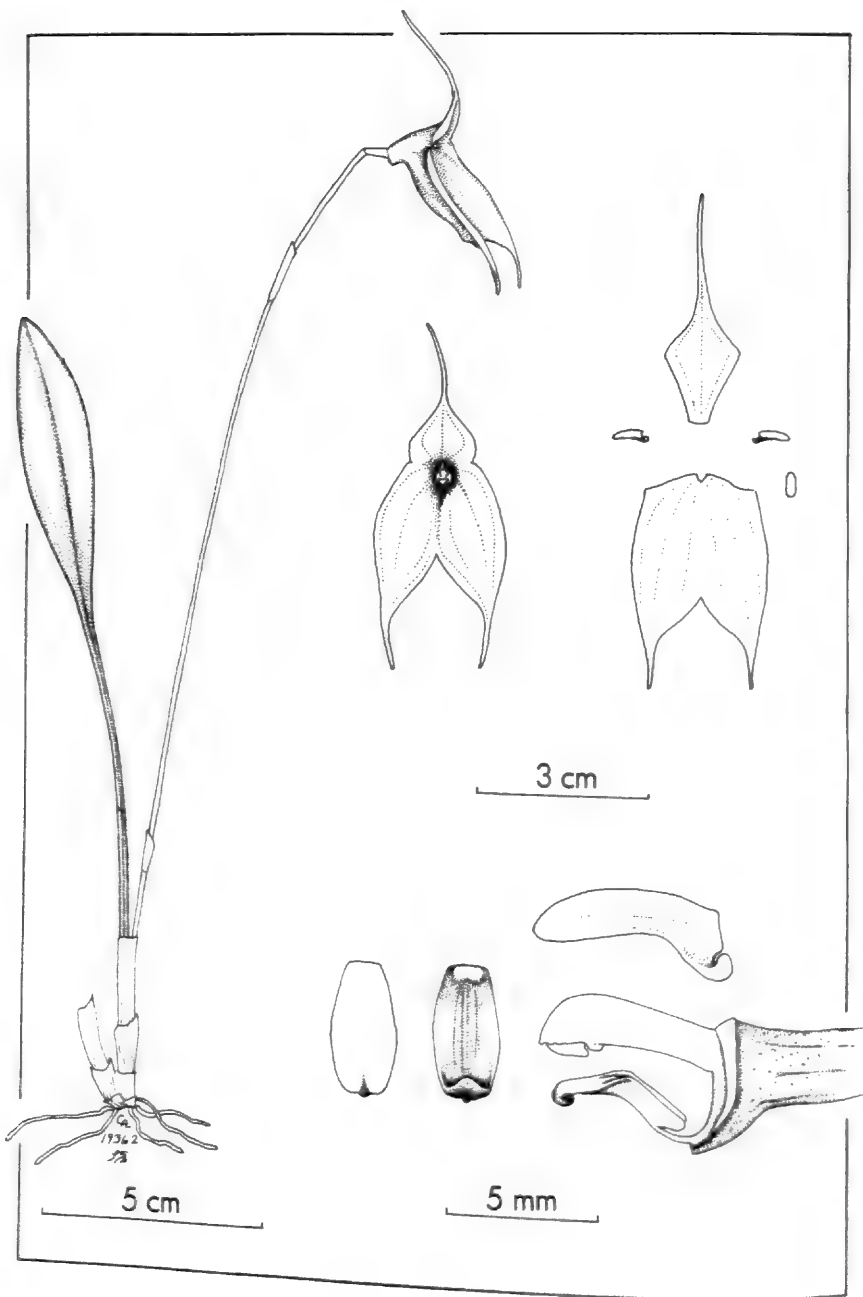


Plate 551. *Masdevallia idae*

Masdevallia ignea Rchb.f., Gard. Chron. 1482, 1871.

Ety.: From the Latin *igneus*, "fire-red," in reference to the color of the flower.

Syn.: *Masdevallia ignea* var. *marshalliana* Rchb.f., Gard. Chron. 351, 1872.

Ety.: Named in honor of W. Marshall, Esq., Enfield, Middlesex.

Syn.: *Masdevallia coccinea* Regel, Gartenflora 25: 193, t. 870, 1876, not Linden ex Lindl.

Ety.: From the Latin *coccineus*, "a bright, deep red color," referring to the flowers.

Syn.: *Masdevallia boddaertii* Linden ex André, Ill. Hort. 136, t. 357, 1879.

Ety.: Named for Dr. Boddaert of Ghent, Belgium.

Syn.: *Masdevallia ignea* var. *boddaertii* Linden ex André, Ill. Hort. 26, 1879.

Syn.: *Masdevallia ignea* var. *stobartiana* Rchb.f., Gard. Chron n.s. 15: 136, 1881.

Ety.: Named for Mr. Stobart who cultivated this variety.

Syn.: *Masdevallia ignea* var. *massangeana* B.S. Williams, Orchid Alb. 6: t. 273, 1887.

Ety.: Named for Mr. Massange who cultivated this variety.

Syn.: *Masdevallia ignea* var. *citrina* hort. ex Stein, Orchideenb. 333, 1892.

Ety.: From the Latin *citrinus*, "lemon yellow," referring to the color of the flowers.

Syn.: *Masdevallia ignea* var. *hobartii* hort. ex Stein, Orchideenb. 333, 1892.

Ety.: Named for Mr. Hobart who cultivated this variety.

Syn.: *Masdevallia ignea* var. *coccinea* hort. ex Stein, Orchideenb. 333, 1892.

Syn.: *Masdevallia ignea* var. *splendens* hort. ex Stein, Orchideenb. 333, 1892.

Ety.: From the Latin *splendens*, "splendid," referring to qualities of the flower.

Syn.: *Masdevallia ignea* var. *aurantiaca* B.S. Williams, Orch. Grow. Man. ed. 7: 494, 1894.

Ety.: From the Latin *aurantiacus*, "orange," referring to the color of the flower.

Syn.: *Masdevallia ignea* var. *armeniaca* B.S. Williams, Orch. Grow. Man. 494, 1894.

Syn.: *Masdevallia ignea* var. *grandiflora* B.S. Williams, Orch. Grow. Man. 494, 1894.

Ety.: From the Latin *grandiflorus*, "large-flowered," referring to the size of the flower.

Syn.: *Masdevallia ignea* var. *pulchra* Vuylsteke ex Cogn., Dict. Icon. Orch. Genus *Masdevallia* t. 2a, 1897.

Ety.: From the Latin *pulcher*, "pretty," referring to the flower.

Syn.: *Masdevallia ignea* var. *vuylstekeana* Cogn., Dict. Icon. Orch. Genus *Masdevallia* t. 2a, 1897.

Ety.: Named for Mr. Vuylsteke who cultivated this variety.

Syn.: *Masdevallia ignea* var. *goorii* hort. ex Sander, Orchid Guide 113, 1901.

Ety.: Named for Mr. Goor who cultivated this variety.

Syn.: *Masdevallia ignea* var. *thomasonii* hort. ex Gentile, List Pl. Cult. Serres Jard. Bot. Etat Brux. 199, 1907.

Ety.: Named for Mr. Thomason who cultivated this variety.

Syn.: *Masdevallia ignea* var. *rubescens* Linden ex Kraenzl., Repert. Spec. Nov. Regni Veg. Beih. 34: 28, 1925.

Ety.: From the Latin *rufescens*, "reddish," referring to the flower.

Syn.: *Masdevallia ignea* var. *superba* Linden ex Kraenzl., Repert. Spec. Nov. Regni Veg. Beih. 34: 28, 1925.

Ety.: From the Latin *superbus*, "superb," referring to qualities of the flower.

Plant large, terrestrial, caespitose to shortly ascending; roots coarse. Ramicauls stout, erect, 2-8 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, long-petiolate, 8-20 cm long including the petiole 2-9 cm long, the blade elliptical-obovate, subacute, 2-4 cm wide, narrowly cuneate below into the sulcate petiole. **Inflorescence** a solitary, showy flower borne by an erect, slender peduncle 18-32 cm long, with a bract below the middle, from low of the ramicaul; floral bract tubular, 1-2 cm long; pedicel 2.5-4 cm long; ovary 6-8 mm long; **sepals** bright orange with the veins darker, the dorsal sepal obovate, 25 cm long, 9 mm wide, connate to the lateral sepals for 14 mm to form a narrow, arcuate, cylindrical, sepaline tube, the free portion ovate with the subacute apex contracted into a slender, antrorse tail ca. 2.5 cm long, the lateral sepals ovate-falcate, 5 cm long, 2 cm wide, connate 1.5 cm to form a flat, bifid lamina broadly expanded beyond the tube, the acute apices shortly acuminate and incurved; **petals** white with a purple midvein, cartilaginous, oblong, obtuse, 8 mm long, 2.5-3 mm wide, the labellar margin with a low, longitudinal callus ending with an obtuse angle at the base. lip white, yellow at the base, suffused with purple centrally, oblong, 8 mm long, 2 mm wide, the apex rounded with sinuate margins, the disc with a pair of low, parallel calli above the middle, the base subcordate, hinged beneath; **column** white, marked with purple, semiterete, 6 mm long, the stout foot 3 mm long with a short, incurved extension.

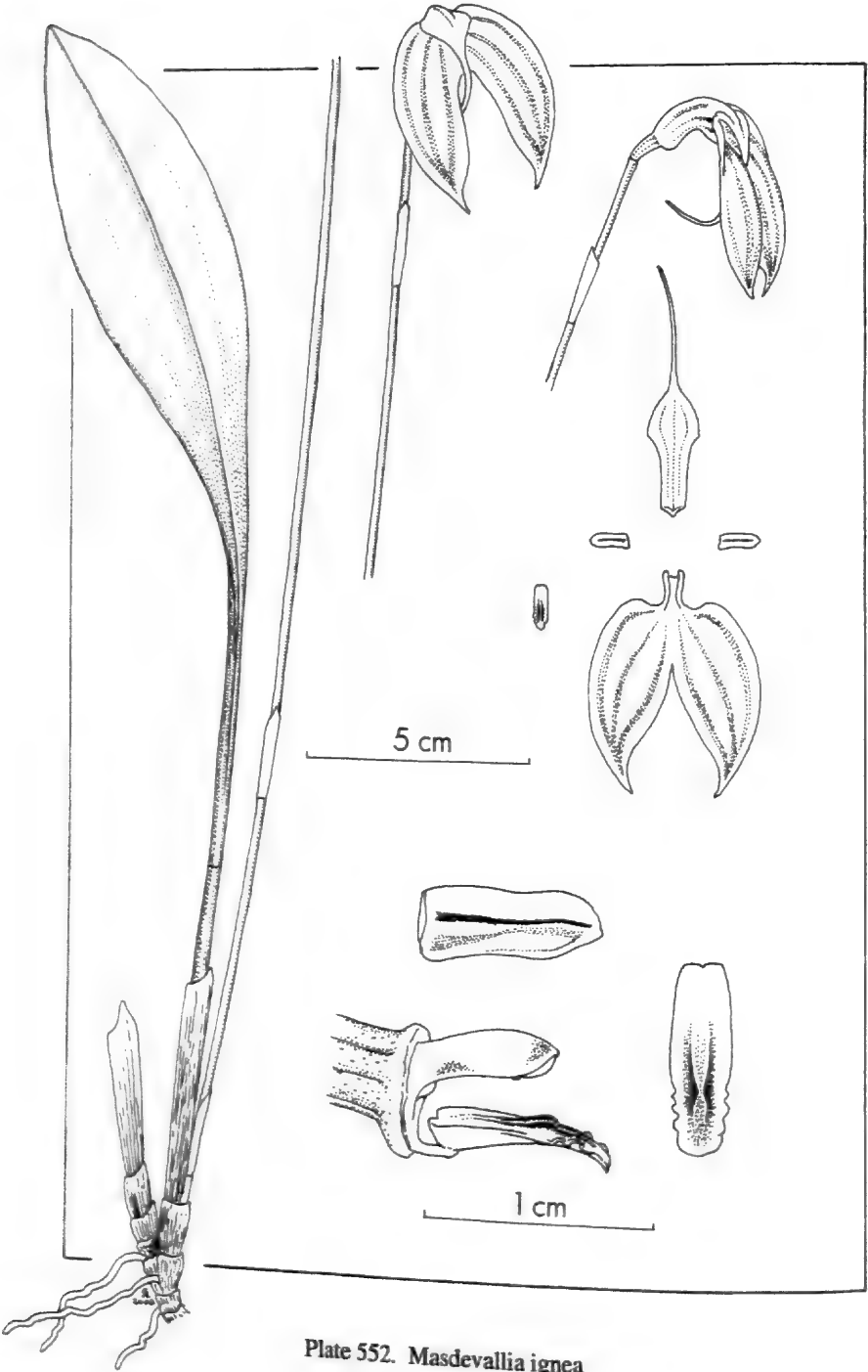


Plate 552. *Masdevallia ignea*

COLOMBIA: Eastern Cordillera, without known locality or collector, cultivated at Chelsea, 22 Nov. 1867, by Messrs. *Veitch and Day 78* (Holotype: W); without collection data, cultivated in Enfield by *W. Marshall s.n.* (holotype of var. *marshallina*: W); Norte de Santander, old dept. of Ocaña: Páramo de Cachirí, alt. 3000 m, 1853, *L. Schlim 415* (BR, G, K, P, W); Ocaña, *Bruchmueller s.n.* (W); Páramo San Pedro, alt. 6,000 ft., *H. Wagener s.n.* (W); without specific locality, alt. "8,000-10,000 ft." 1846-52, *L. Schlim 1164* (G, P); without data, cultivated in St. Petersburg, Russia, 8 June 1886 (LE); Cerro Oroque, between Abrego and Las Jurisdicciones, alt. 3700 m, 19 May 1969, *H. García-Barriga & R. Jarramillo 19729* (AMES, COL); terrestrial in forest below Páramo de Jurisdicciones, alt. 3130 m, 11 Nov. 1981, *C. Luer, J. Luer, R. Escobar & D. Portillo 6649* (SEL); same area, alt. 2950 m, 10 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10246* (MO); without locality or collector, cultivated by M. & O. Robledo at La Ceja, 12 Oct. 1977, *C. Luer 2003* (SEL).



This species was first imported from the Eastern Cordillera of Colombia in 1870 by Messrs. Low and Co. Specimens of the fire-colored flowers cultivated by

Messrs. Veitch and Day were forwarded to Professor Reichenbach who so aptly named the species the following year. It became an immediate horticultural favorite. Collectors were dispatched to Colombia to seek color variations in the flowers to satisfy the trade, which resulted in numerous descriptions of horticultural varieties. *Masdevallia ignea* was also used extensively in hybridization.

The color of the flowers is variable from all the yellows through orange and red-orange with or without degrees of purple suffusion. The size of the flowers is also variable, but the reliable identifying feature is the tail of the dorsal sepal that curves downward between the lobes of the lateral sepals. Without the benefit of Reichenbach's herbarium specimens for comparison, *M. ignea* became confused with Reichenbach's *M. militaris*, a red color-form of *M. coccinea* Linden ex Lindl. *Masdevallia ignea* is identified as *M. militaris* by Woolward in her monograph of the 1890s. Specimens of *M. ignea* collected in 1853 by Schlim (*Schlim 415*) on his expedition to New Grenada nearly twenty years before Reichenbach's description, were annotated in several herbaria as *M. coccinea*, but the specimen at K bears the written name *cinnabarina*. Perhaps Lindley recognized the difference, but he failed to publish the name.

Masdevallia ignea today still grows luxuriantly but locally in the shady, rich humus of tall forests at altitudes near 3000 meters above sea level. It grows fairly well in cool cultivation, but the foliage never attains the immense proportions that develop in natural conditions.

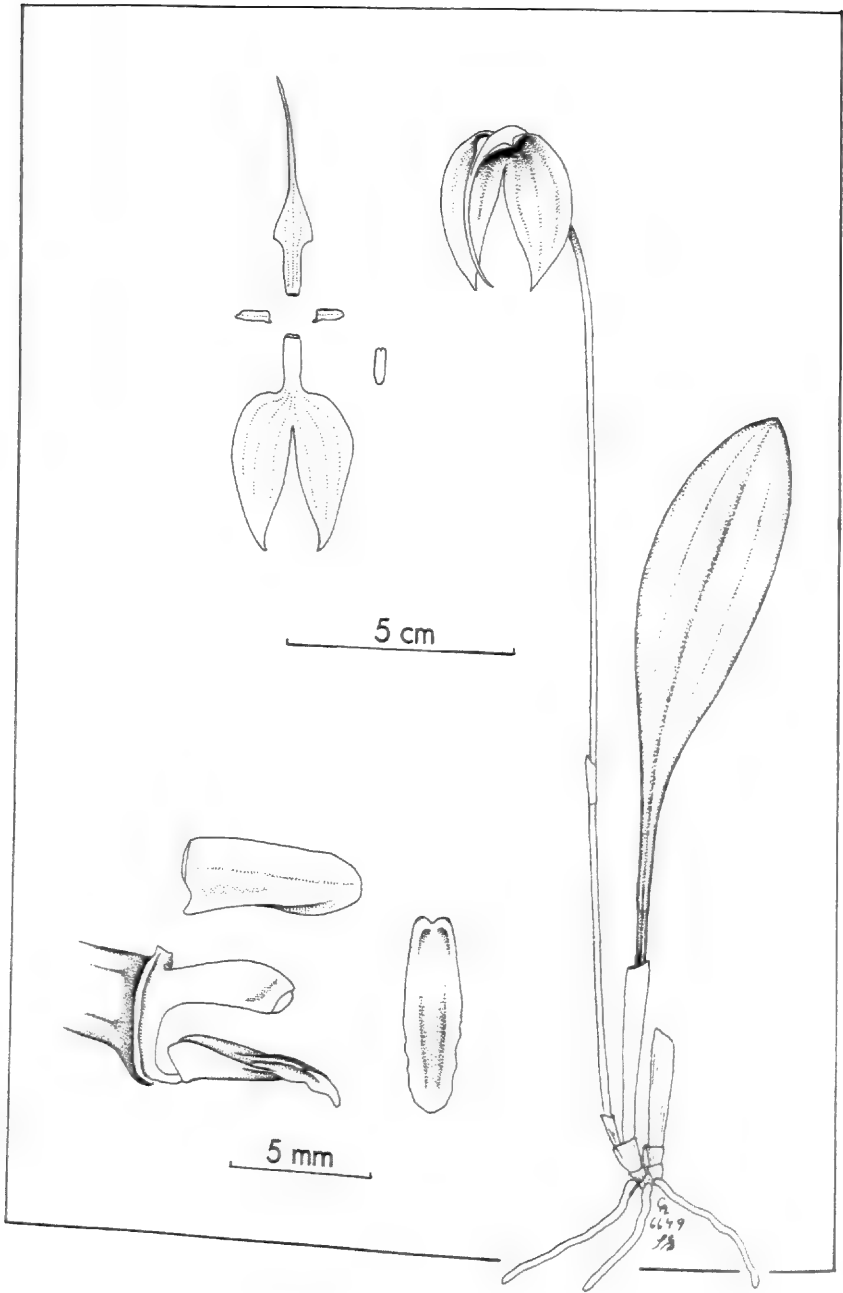


Plate 553. *Masdevallia ignea*

Masdevallia niesseniae Luer, Monogr. Bot. Syst. Missouri Bot. Gard. 65: 110, 1998.
 Ety.: Named for Andrea Niessen de Uribe of Orquídeas del Valle, Cali, Colombia.

Plant medium in size, caespitose; roots coarse. Ramicauls erect, channeled, 3-5 cm long, enclosed by 2-3 white, loose, tubular sheaths. **Leaf** erect, coriaceous, 10-15 cm long including the petiole 2-3 cm long, the blade elliptical, subacute, 2-2.5 cm wide, gradually narrowed below into the petiole. **Inflorescence** a single flower, borne by a slender, erect peduncle up to 23 cm long, with a bract below the middle, from 1.5-3 cm above the base of the ramicaul; floral bract thin, tubular, 2.5 cm long; pedicel 3 cm long; ovary 7-8 mm long; **sepals** golden yellow, glabrous, the dorsal suffused with rose along the midvein, obovate, 30 mm long, 25 mm wide, connate to the lateral sepals for 20 mm to form a funnel-shaped, sepaline tube, the apex broadly rounded, abruptly contracted into a slender tail 5.5 cm long, the lateral sepals 40 mm long, connate 30 mm into a broadly expanded synsepal 35 mm wide, longitudinally sulcate with the surface convex between grooves, with the apices acute, contracted into slender tails 4 cm long; **petals** white, cartilaginous, ovate-subtriangular, 7.5 mm long, 3.5 mm wide above the base, the apex obliquely obtuse, the labellar margin with a marginal callus ending in a broadly rounded margin above the base; **lip** white, suffused with rose, oblong, 7 mm long, 2.75 mm wide, with the margins thin, the apex obtuse, recurved, the disc thickened centrally with a pair of low calli near the middle, sulcate between, the base truncate, hinged beneath to the column-foot; **column** white, suffused with rose, thick, semiterete, 6 mm long, the foot 2 mm long, with a short, incurved extension.

COLOMBIA: **Valle del Cauca**: near Lago de Calima, alt. 1500-1600 m, collected by Ishmael Miranda, March 1997, cultivated by Orquídeas del Valle, Cali, by Andrea Niessen & Juan Carlos Uribe, *C. Luer* 18789 (Holotype: MO).

This spectacular species was collected near an area of southern Colombia which had been visited repeatedly by collectors. About 30 freshly collected plants were lying on a bench at Orquídeas del Valle near Cali at the time of the Cali orchid show in March 1997. The flowers were reported to be large and yellow, which proved to be true when plants began to flower the following year.

The large, long-tailed, golden yellow flowers are larger and more spectacular than the golden yellow flowers of coveted *M. davisii*. Some yellow color-variations of *M. coccinea* share the same intense color that is not approached by any other member of the subsection, except perhaps *M. veitchiana* and *M. welischii*.

The leaves are not as thickly coriaceous as those of many other species of the subsection. The erect peduncle bears the flower above the leaves. From a funnel-shaped, sepaline tube the rounded dorsal sepal curves upward while the broadly expanded, longitudinally sulcate synsepal arches below with reflexed tails. Between depressed veins the surface is convex. The lip is oblong as in other members of the subsection, but in the center there is a shallow concavity between a pair of low calli.



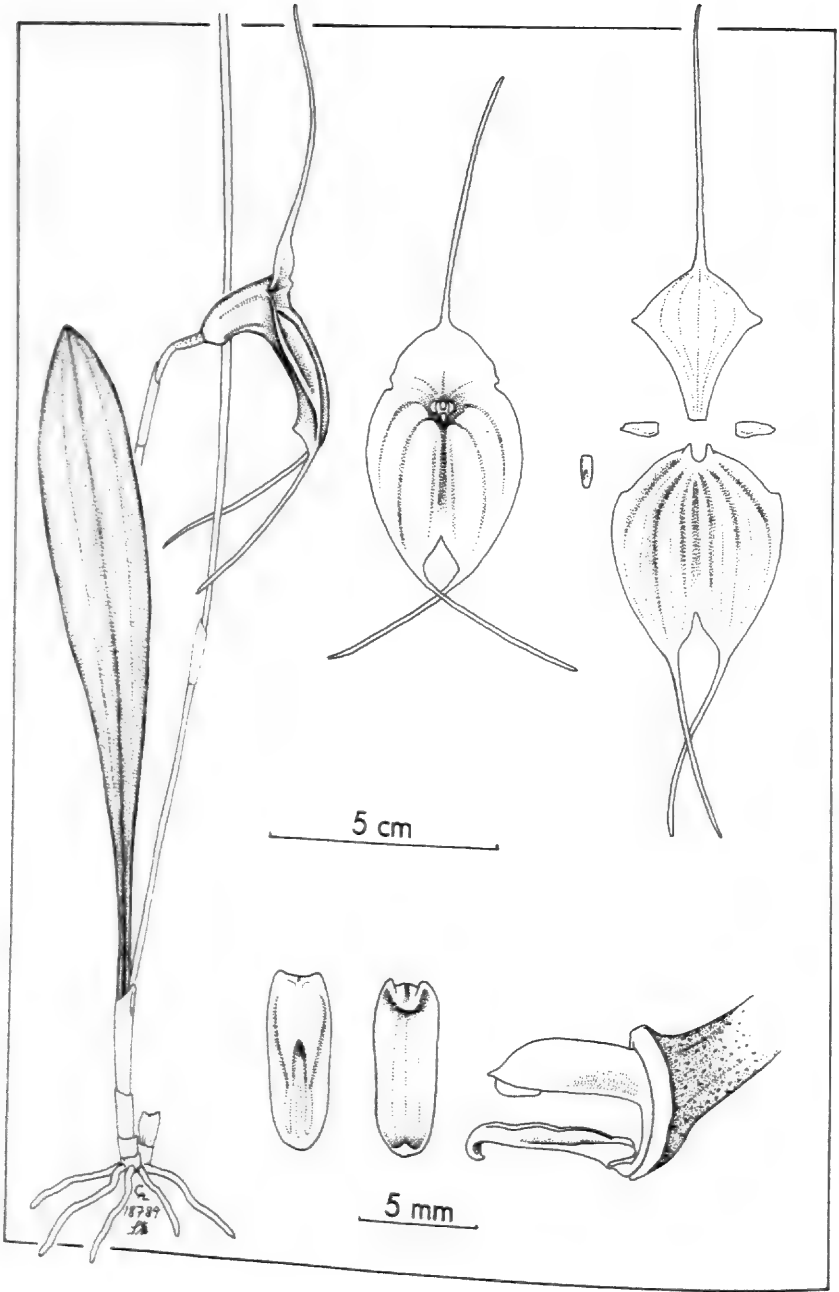


Plate 554. *Masdevallia niesseniae*

Masdevallia rosea Lindl., Ann. Mag. Nat. Hist. 15: 257, 1845, subsp. *rosea*.

Ety.: From the Latin *roseus*, "rose-colored," referring to the color of the flowers.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, blackish, 3-5 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect to suberect, coriaceous, petiolate, 10-18 cm long including the petiole 2-6 mm long, the blade elliptical, subacute to obtuse, 2.5-4 cm wide, cuneate below into the slender, channeled, blackish petiole. **Inflorescence** a solitary, showy flower borne by a suberect, slender peduncle 10-15 cm long, with a bract below the middle, from low on the ramicaul; floral bract tubular, 13-17 mm long, pedicel 10-22 mm long; ovary 6-8 mm long; **sepals** bright rose, becoming bright orange toward the base, glabrous, the dorsal sepal oblong, ca. 35 mm long, 7-8 mm wide, connate to the lateral sepals for 27-28 mm to form a slightly arched, sepaline tube, the free portion narrowly triangular, the acute apex attenuated into a filiform, deflexed tail ca. 5 cm long, the lateral sepals obovate, oblique, ca. 60 mm long, connate 30-35 mm, the basal tubular portion 10 mm wide, the free, expanded portions 15-17 mm wide, the acute apices attenuated into tails ca. 15 mm long; **petals** white, oblong, 5.5 mm long, 2 mm wide, the apex truncate, obscurely lobulate, the labellar margin callous, with a broadly triangular, acute, retrorse appendage above the base; **lip** pale yellow, lightly flecked with red, oblong, 7 mm long, 3 mm wide, the apex obtuse, revolute, with a marginal, black-purple callus, glabrous, at most microscopically cellular-glandular, the base truncate, hinged below; **column** white, semiterete, 6 mm long, the foot stout, 2 mm long with an incurved extension.

ECUADOR: Loja: alt. 8,000 ft., ca. 1842, *T. Hartweg s.n.* (Holotype: K; Isotype: W); slopes of the Andes, 1861-63, *R. Pierce s.n.* (BM). "Loja," 1878, *W. Jameson 103* (W); near the pass between Loja and Zamora, 24 Aug. 1878, *F.C. Lehmann s.n.* (W); same area, 27 Sept. 1959, *B. Maguire 44342* (NY); same area, alt. 2800 m, 24 Sept. 1967, *B. Sparre 18924* (S); same area, alt. 2800 m, 28 Sept. 1961, *C.H. Dodson & L.B. Thien 752* (MO, SEL); same area, alt. 2600 m, 21 Sept. 1980, *C. Luer, C.H. Dodson et al. 5526* (SEL); same area, *H. Balslev & W.C. Steere 3179* (NY, QCA); south of Loja, 18 Apr. 1946, *R. Espinosa 181* (AMES, LOJA); Cerro Toledo, southeast of Yangana, alt. 3000-3200 m, 6 Apr. 1985, *G. Harling & L. Andersson 23800* (GB); same area, alt. 2950 m, 22 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 10799* (MO). **Tungurahua:** slopes of Volcán Tungurahua, alt. 9,800 ft., June 1877, *F.C. Lehmann 67* (W); above Baños, alt. 3070 m, 2 June 1971, *B. MacBryde 403* (AMES, SEL); Cordillera de los Llanganates, Leito, alt. 3100 m, 11 Apr. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 11162* (MO). **Pastaza:** wet forest north of Topo, Río Zuñag, alt. 2500-2600 m, 25 Feb. 1990, *A. Hirtz, S. Dalström et al. 4614* (MO). **Morona-Santiago:** east of Cuenca, Pulpite near Yavileay, alt. 2500-2900 m, *F.C. Lehmann 6609* (K); cloud forest east of Paute, alt. 2700 m, cultivated, 18 Aug. 1978, *C. Luer 3316* (SEL); southeast of Sigsig, alt. 2700 m, 13 Jan. 1989, *C. & J. Luer, P. & A. Jesup, A. Hirtz & S. Ortega 13873* (MO); between Sigsig and Chiguinda, alt. 2600 m, 11 Aug. 1990, *A. Hirtz 5052* (MO). **Azuay:** near Sevilla de Oro, alt. 8,000-9,000 ft., 27 July 1945, *W.H. Camp E-4334* (AMES, S); same area, alt. 3200 m, 1 July 1947, *G. Harling 1363* (S). **Zamora-Chinchipec:** east of the pass between Loja and Zamora, alt. 2700 m, 12 Oct. 1959, *C.H. Dodson 17* (MO, SEL); same area, collected by B. Malo, cultivated at Tarqui near Cuenca, 5 Feb. 1978, *C. Luer 2459* (SEL); same area, alt. 2750 m, 20 Feb. 1986, *C. Luer, J. Luer, A. Hirtz, W. Flores & A. Embree 11971* (MO); cloud forest east of Yangana, alt. 2650 m, 4 Mar. 1982, *C. Luer, A. Andreetta, D. D'Alessandro & S. Dalström 7138* (SEL); same area, alt. 2950 m, 22 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 10977* (MO).



Locally abundant in east-central and southeastern Ecuador, this spectacularly colored species was first discovered east of Loja by the German collector Karl Theodor Hartweg about 1842. The bright rose of the broadly expanded sepals gives way to orange toward the base of the tube. Very rarely, plants with pure-white flowers occur.

The apex of the lip of plants from southern Ecuador is broad, thin, recurved, and essentially glabrous. The apex of the lip of plants of subsp. *echinata* from Colombia and northern Ecuador is echinate.

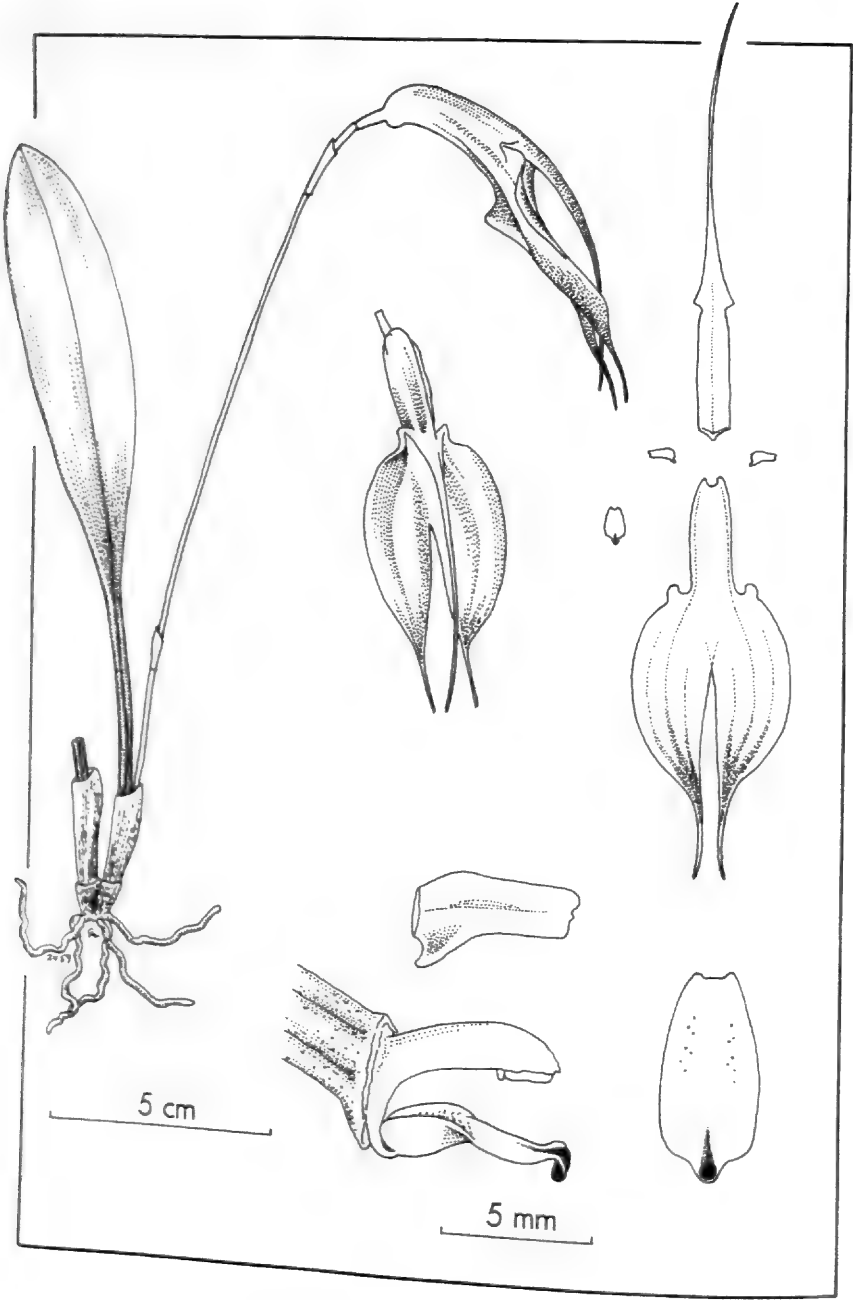


Plate 555. *Masdevallia rosea*

Masdevallia rosea Lindl. subsp. **echinata** (Luer & Andreetta) Luer, Lindleyana 3: 59, 1988.

Bas.: *Masdevallia echinata* Luer & Andreetta, Selbyana 2: 371, 1978.

Ety.: From the Latin *echinatus*, "bristly," referring to the apex of the lip.

Syn.: *Masdevallia rosea* sensu Veitch, Man. Orchid. Pl. 5: 60, 1889, non Lindl. 1845.

Syn.: *Masdevallia rosea* sensu Woolward, Monograph Genus *Masdevallia* 1896, non Lindl. 1845.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls blackish, slender, erect, 1-3 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect to suberect, coriaceous, petiolate, 10-15 cm long including the petiole 3-6 cm long, the blade elliptical, subacute to obtuse, 2-3.5 cm wide, cuneate below into the slender, channeled, blackish petiole. **Inflorescence** a solitary, showy flower borne by a suberect, slender peduncle 10-15 cm long, with a bract below the middle, from low on the ramicaul; floral bract tubular 9-13 mm long; pedicel 10-19 mm long; ovary 8 mm long; **sepals** bright rose, becoming orange toward the base, glabrous, the dorsal sepal narrowly linear-oblong, 30 mm long, 2-5 mm wide, connate to the lateral sepals for 28 mm to form a slender, sepaline tube, the free portion narrowly triangular, the acute apex attenuated into a filiform, deflexed tail ca. 4 cm long, the lateral sepals obovate, oblique, ca. 55 mm long, connate 30 mm, the basal tubular portion 7 mm wide, the free, expanded portions 12 mm wide, the acute apices contracted into slender tails 10 mm long; **petals** white, more or less oblong, 4.5 mm long, 1-2.25 mm wide, the apex obtuse, the upper margin dilated in the lower third, the lower margin callous, with a broadly triangular, acute, retrorse appendage above the base; **lip** yellow, purple at the apex, sparsely short-pubescent, oblong, 5 mm long, 2 mm wide, the apex thickened, rounded, purple-spiculate, the base subcordate, hinged below; **column** white, semiterete, 5 mm long, the foot 2 mm long with a short, incurved extension.

ECUADOR: **Carchi**: epiphytic in cloud forest east of Tulcán, alt. ca. 3000 m, April 1978, collected by A. Andreetta & A. Hirtz, cultivated in Cuenca, 18 Aug. 1978, *C. Luer 3315* (holotype of *M. echinata*: SEL). **Sucumbíos**: eastern slopes of the Andes adjoining Prov. of Pasto, alt. 8,000-9,000 ft., Oct. 1854, *Jameson 4* (K); Río Clavadero, Laguna de La Virgen, alt. 8,750 ft., 26 July 1944, *I. Wiggins 10458* (AMES); Santa Bárbara, alt. 2700 m, 15 Feb. 1959, *G. Harling 4142* (S); epiphytic in cloud forest southeast of El Carmelo, alt. 2200 m, 17 May 1981, *C. Luer, J. Luer & A. Hirtz 6321* (SEL). **Imbabura**: east slopes of Volcán Cayambe, alt. 8,500 ft., 22 July 1944, *W.B. Drew E-363* (AMES). COLOMBIA: **Nariño**: eastern slopes of Pasto, Páramo de Aponte, alt. 2900-3200 m, Oct. 1878 and 20 Feb. 1881, *F.C. Lehmann 203* (AMES, BM, G, K, LE, NY); Páramo de Santiago, alt. 3000 m, 18 Sept. 1956, *D.W. Overton 94* (AMES). **Putumayo**: east of Sibundoy, alt. 7,400 ft., 29 Oct. 1946, *M.B. Foster & R. Foster 2000* (AMES); epiphytic in páramo between La Cocha and Sibundoy, alt. 3000 m, 4 Aug. 1978, *C. Luer, J. Luer & R. Escobar 3164* (SEL).



This taxon, externally indistinguishable from *M. rosea*, is treated here as a subspecies. It occurs in southern Colombia and northernmost Ecuador. Plants from Colombia were exported to Europe by Consul Lehmann, and were identified as Lindley's *M. rosea*. No living plants from the original locality of *M. rosea* in southeastern Ecuador had been imported.

The lip of plants from southeastern Ecuador, where the type was collected, is broad, thin, and essentially glabrous with an obtuse, revolute apex. The apex of the lip of the plants from Colombia and northern Ecuador is thick and echinate. Therefore, all old accounts of living plants of *M. rosea* include the thick, spiculate apex of the lip found in plants from the north. Both taxa are undoubtedly hummingbird pollinated, but whether or not the differences in the lip indicate specific hummingbirds remains uninvestigated.

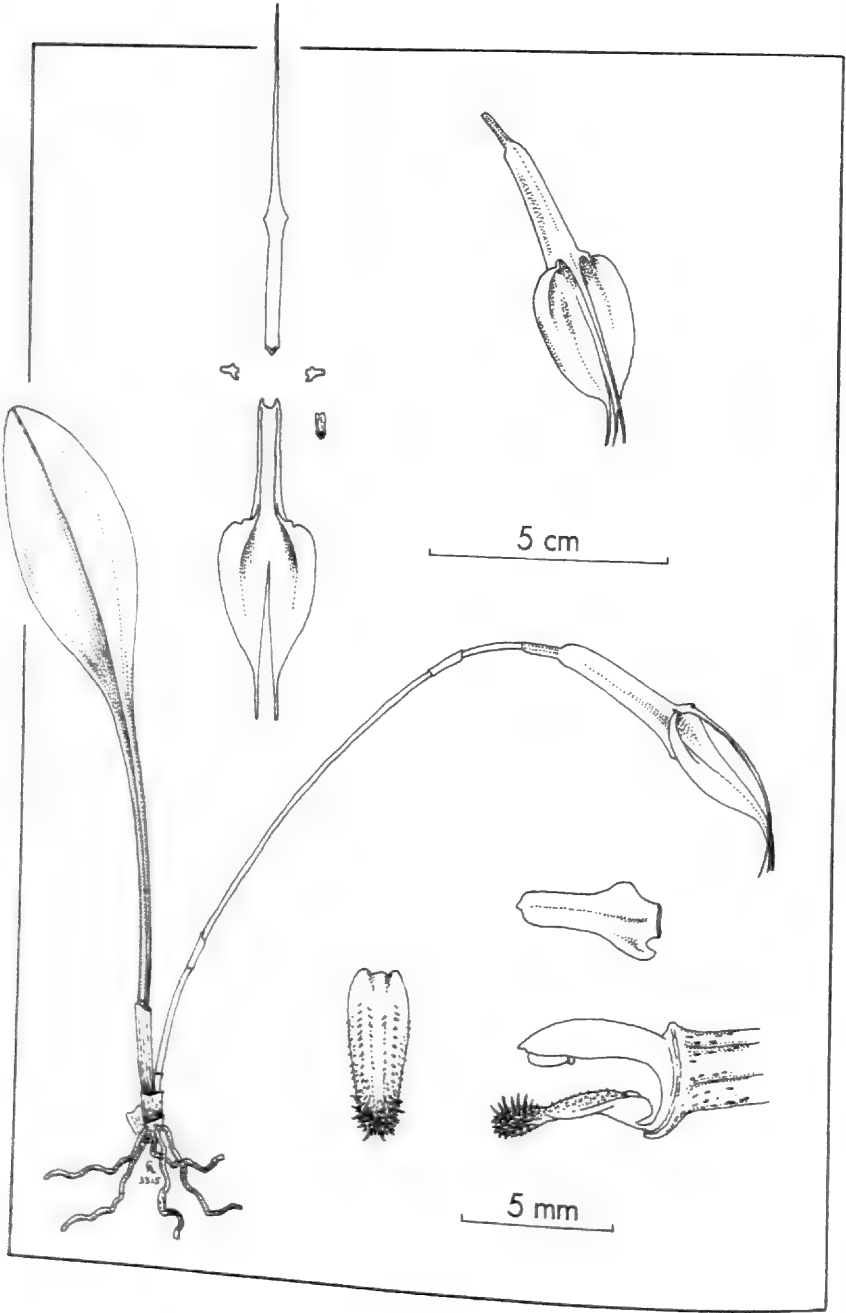


Plate 556. *Masdevallia rosea*
subsp. echinata

Masdevallia Xsplendida Rchb.f., Gard. Chron. 9(1): 493, 1878. (*M. veitchiana* Rchb.f. X *M. barlaeana* Rchb.f.)

Ety.: From the Latin *splendidus*, "splendid," in allusion to qualities of the flower.

Syn.: *Masdevallia Xparlatoreana* Rchb.f., Gard. Chron. 11(1): 172, 1879. (*M. barlaeana* Rchb.f. X *M. veitchiana* Rchb.f.)

Ety.: Named for Filippo Parlatore in appreciation of his work with the Exhibition and Congress of Florence, Italy.

Plant medium in size, caespitose; roots coarse. Ramicauls stout, erect, 2.5-3.5 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, thickly coriaceous, 7-14 cm long including an indistinct petiole, the blade narrowly elliptical, subacute to acute, 1.5-2 cm wide, gradually narrowed below into the channeled base. **Inflorescence** a solitary, showy flower borne by a relatively slender, erect peduncle, 15-17 cm long, with a bract below the middle, from low on the ramicaul; floral bract 1.5 cm long; pedicel 3 cm long; ovary 7 mm long; **sepals** "orange-scarlet," minutely pubescent with purple, clavate hairs, the dorsal sepal obovate-spathulate, the blade 25-27 mm long, 13-15 mm wide at the expanded orifice of the tube, connate 15-17 mm into a cylindrical tube, the free portion ovate, the apex rounded, contracted into an erect, slender, red tail 25-30 mm long, the lateral sepals more or less obovate, oblique, 35-37 mm long, connate 24-26 mm into an expanded, bifid lamina 28 mm wide, with the apices obtuse to subacute, contracted into slender, red tails 12-15 mm long; **petals** white, oblong, 8-10 mm long, 3-3.5 mm wide, the apex truncate, obscurely trilobed or apiculate, the labellar margin with a longitudinal callus ending in a short tooth or an obtuse angle at the base; **lip** white, with purple apex, oblong, thin, 7-7.5 mm long, 2.5-3 mm wide, with the margins slightly revolute above the middle, the apex subacute with a callus, the disc shallowly sulcate between a pair of low, longitudinal calli, the base subtruncate, hinged beneath; **column** white with the margins purple, semiterete, 5-6 mm long, the foot stout, 2 mm long with an extension.

PERU: Cuzco?: without collection data, imported by Messrs. Veitch, s.n (Holotype: W); without locality, imported by Messrs. Veitch, s.n (holotype of *M. parlatoreana*: W). **Cuzco**: railway between Cuzco and Macchu Pichu, below Snowpeak La Veronica, alt. 4045 m, July 2000, cultivated by J & L Orchids 900-608, Easton, CT, Nov. 2000, I. Rolando s.n. (MO), C. Luer illustr. 19441. Artificial hybrid between *M. veitchiana* and *M. barlaeana* by G. Staal, Palo Alto, CA, 7 July 1989, C. Luer 14399 (MO).

The first plants of this presumed natural hybrid were forwarded to Reichenbach with the skimpy information that they had been collected in a "certain place" in the Andes of South America. In his original publication Reichenbach writes that it "makes one think of a mule between *M. veitchiana* and *M. barlaeana*." He was right; later hybridizations substantiated his supposition. Plate 557 is the cross made by Gerardus Staal. The following year, Reichenbach published *M. Xparlatoreana* as a possible natural hybrid similar to *M. Xsplendida* in appearances and circumstances. Again his supposition proved correct by artificial recreation of the taxon.

It is generally accepted now that *M. Xsplendida* is a hybrid with *M. veitchiana* as the female parent and *M. barlaeana* as the male, and that *M. Xparlatoreana* is a hybrid of the reverse parentage. Numerous plants intermediate between *M. barlaeana* and *M. veitchiana* have been found intermixed with both of the above growing on exposed, rocky slopes at a high altitude of more than 4000 meters in southern Peru. Plate 558 is a collection by Dr. Isaias Rolando. The plant painted by Miss Woolward for *M. amabilis* in her monograph appears similar to this hybrid.



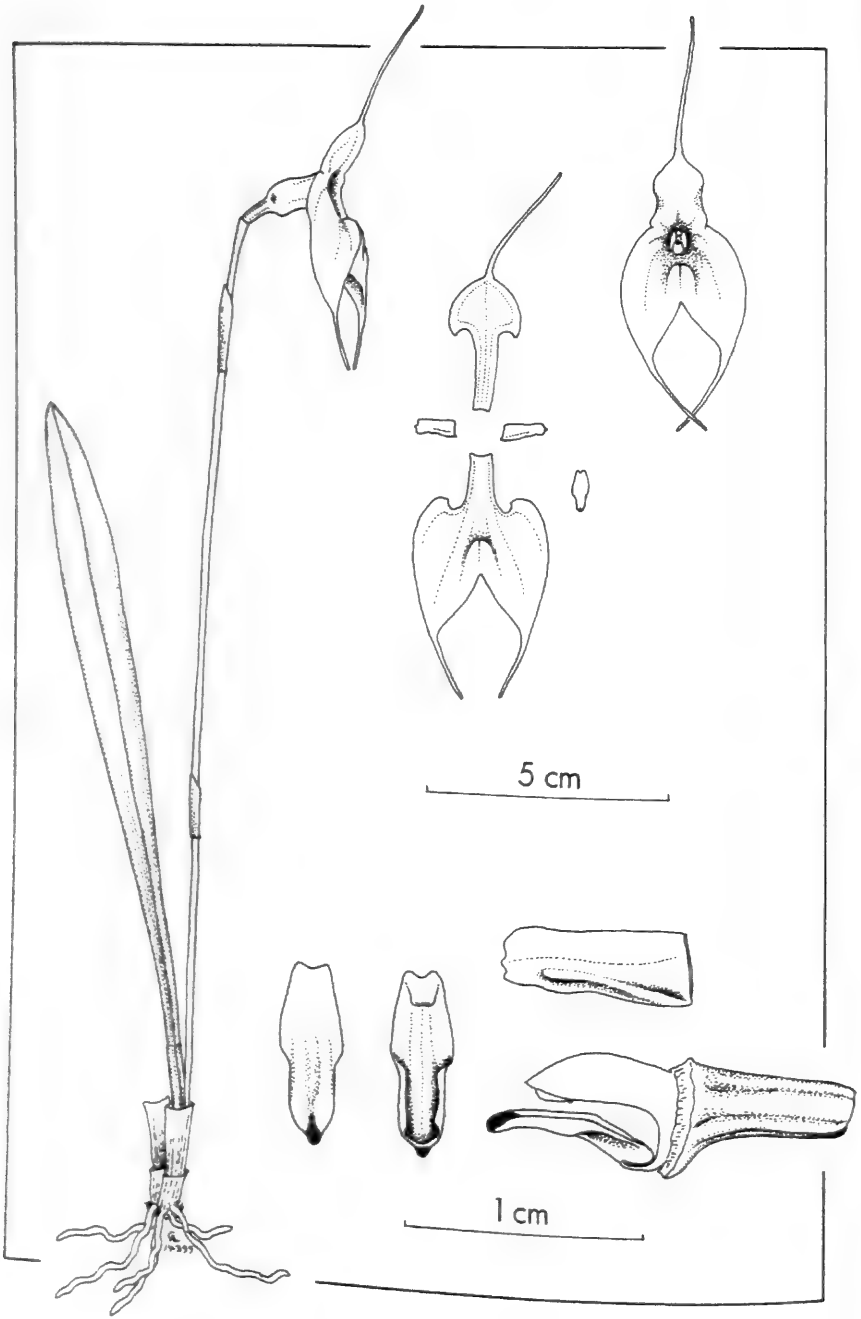


Plate 557. *Masdevallia Xsplendida*

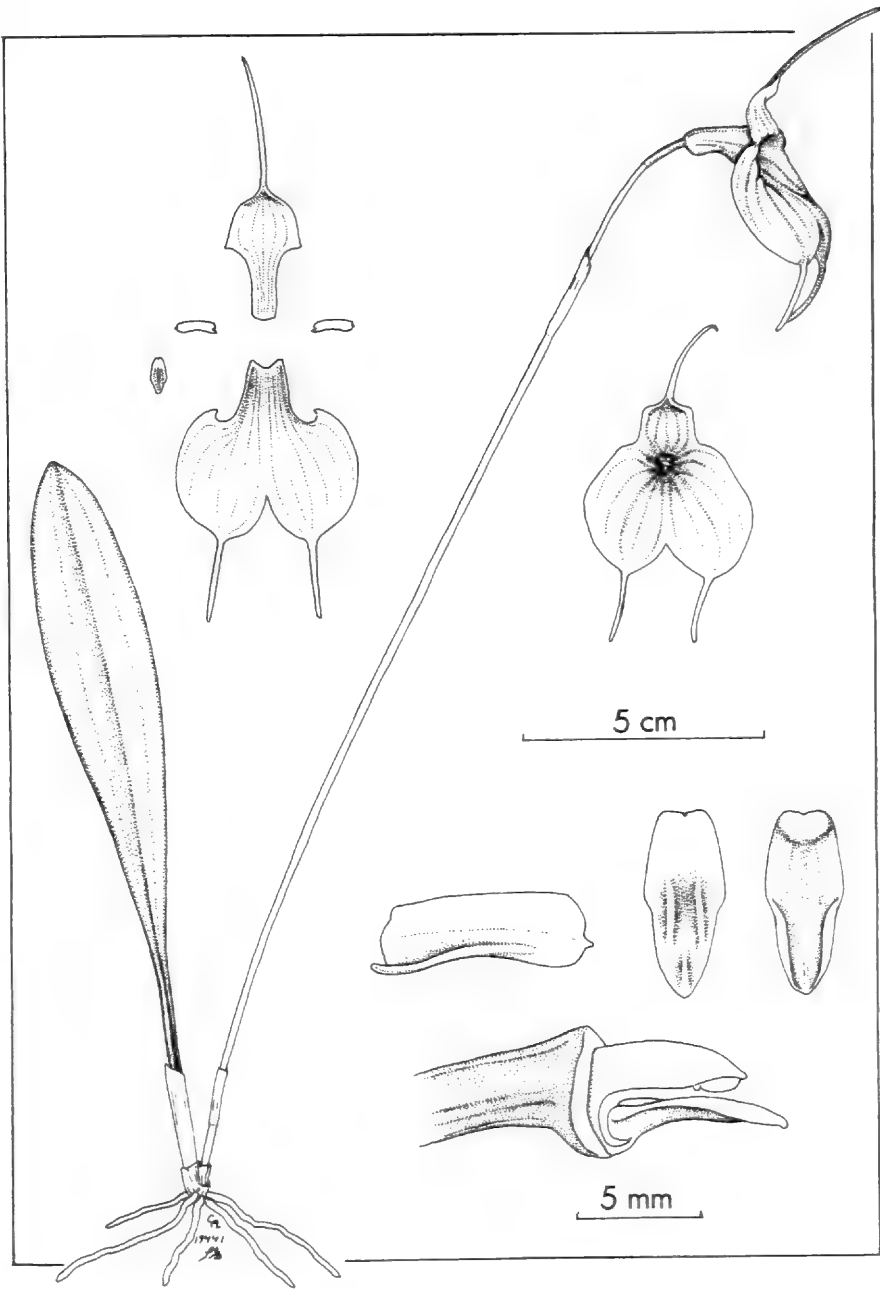


Plate 558. *Masdevallia Xsplendida*

Unidentified plants without collection data, presumably belonging to subsection *Coccineae*, are not uncommon in many collections. Below is one that is a probable hybrid that was cultivated by the late Lil Severin in Cupertino, California.

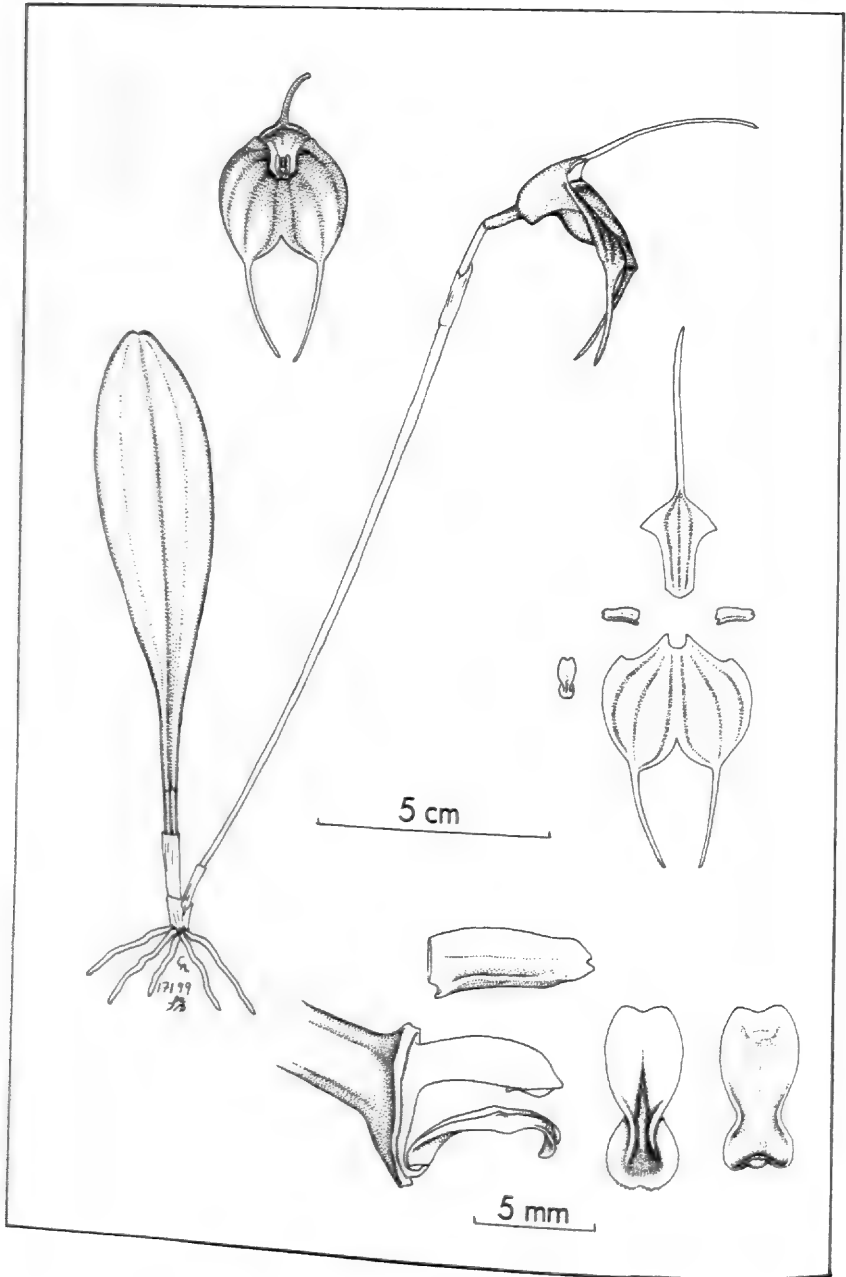


Plate 559. *Masdevallia indeterminata*

Masdevallia stumpfleii Braas, *Orquideología* 13: 194, 1979.

Ety.: Named in honor of Rudolf Stümpfle of Lima, Peru, from whom the species was imported.

Plant medium in size, probably terrestrial, caespitose; roots coarse. Ramicauls erect, slender, 2-4.5 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, coriaceous, 6-14 cm long including the petiole 1.5-2 cm long, the blade narrowly elliptical, obtuse, 1.5-2 cm wide, the base narrowly cuneate into the petiole. **Inflorescence** a solitary flower borne by a slender, weak peduncle 18-29 cm long, with a bract near the base, from low on the ramicaul; floral bract thin, tubular, 1 cm long; pedicel 3-3.5 cm long; ovary 7-10 mm long; **sepals** bright red-orange, microscopically pubescent within, the dorsal sepal obovate, shallowly concave, 13-28 mm long, 11-18 mm wide, connate to the lateral sepals for 8-12 mm to form a short, sepaline tube, the apex obtuse, contracted into a slender, red tail 13-15 mm long, the lateral sepals ovate, oblique, 23-40 mm long, 8-17 mm wide, connate for 10-18 mm to form a shallow mentum, the apices acute, acuminate to the tip into tails 4-6 mm long; **petals** white, oblong, 6.5 mm long, 2.5 mm wide, the apex truncate, obscurely trilobed, the labellar margin with a longitudinal carina ending in a thick, blunt, incurved process at the base; **lip** white, oblong, 4.5-6 mm long, 2-3.5 mm wide, the apex truncate, suffused with purple, with the obtuse tip recurved, the disc featureless, the base truncate, hinged beneath; **column** white, semiterete, 5.5 mm long, slightly denticulate at the apex, the foot thick, 2 mm long with a short, incurved extension.

PERU: **Huancavelica?**: without collection data, Oct. 1973, imported from R. Stümpfle (H-1073) in 1974, cultivated in Germany, *L. Braas* 2626 (Holotype in the private herbarium of L. Braas); same source, imported from R. Stümpfle by M. & O. Robledo, cultivated at La Ceja, Colombia, 20 Jan. 1978, *C. Luer* 2358 (SEL); same collection, cultivated at La Ceja, 16 Apr. 1988, *C. Luer* 13197 (MO).

This species was exported from Peru by Rudolf Stümpfle to Germany in 1974 where it subsequently flowered. It was also exported to the Robledos in Colombia, and to J & L Orchids in Connecticut, U.S.A. The exact locality and habitat are still unknown, but presumably it grows terrestrially in high areas. Divisions of these importations are present today in many collections. The dimensions of the vegetative and floral parts vary greatly with growing conditions.

Masdevallia stumpfleii is characterized by the slender, thickly coriaceous leaf and a long, weak peduncle as seen in *M.*

amabilis. The flower is bright red-orange with a short, gaping sepaline tube. The dorsal sepal is broad and terminated by an equally long tail. The lateral sepals are terminated by narrowly acute, tail-like apices.

Much of Schlechter's description of *M. venusta* applies to *M. stumpfleii*, but the leaves of *M. venusta* are long-petiolate and up to three centimeters broad; the sepals are five centimeters long with very acuminate tails; and the lateral sepals are subfalcate and only a trifle more than one centimeter wide.



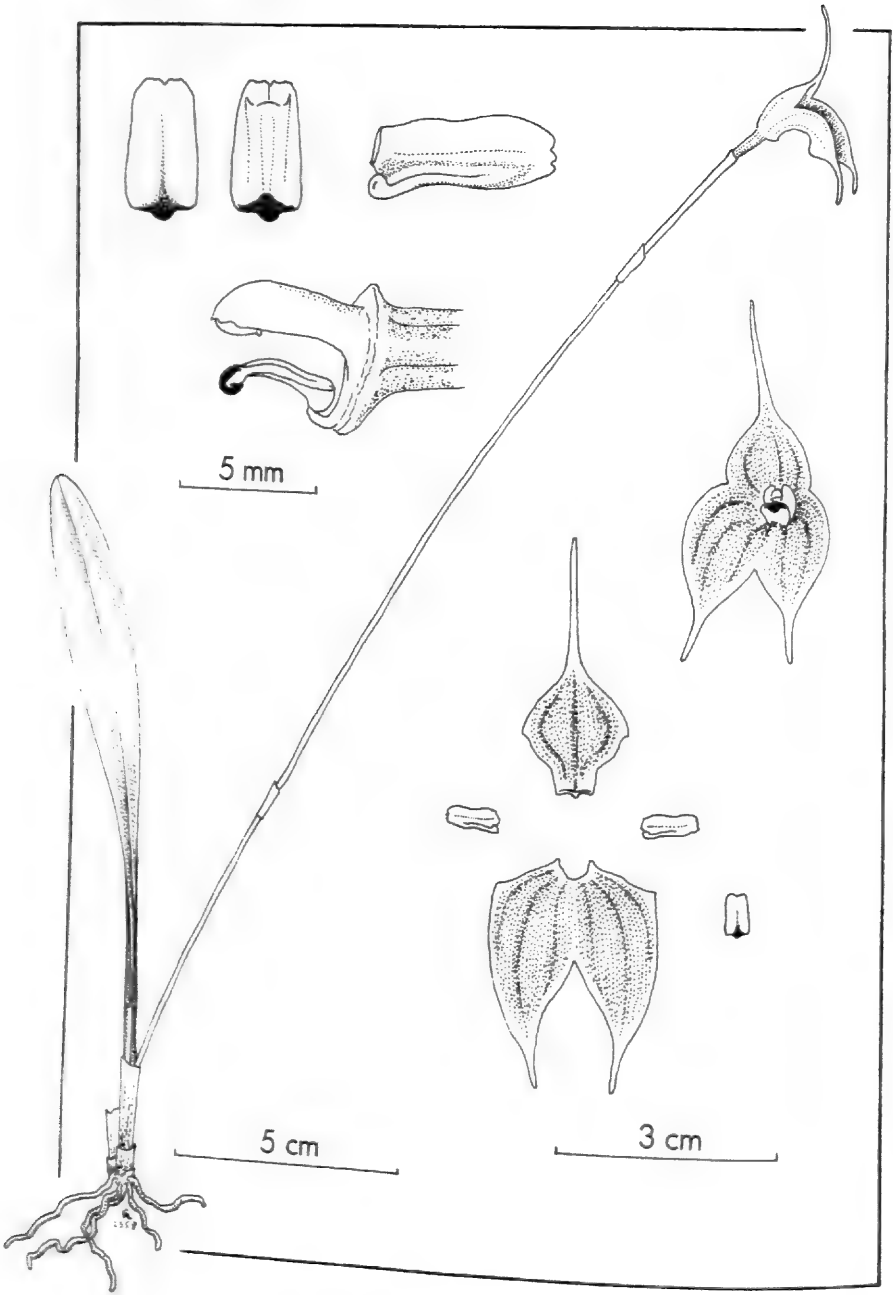


Plate 560. *Masdevallia stumpfleii*

Masdevallia veitchiana Rchb.f., Gard. Chron. 814, 1868.

Ety.: Named in honor of the firm Messrs. Veitch & Sons, who first imported this species.

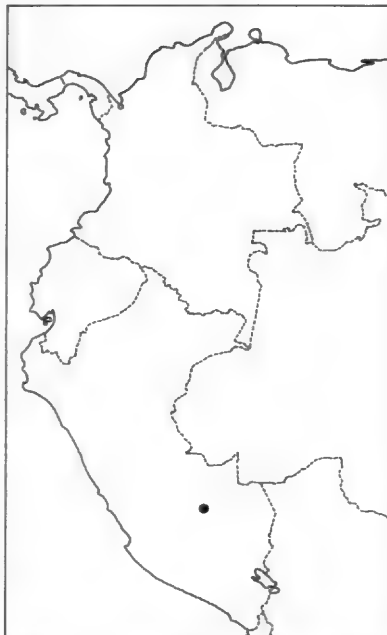
Syn.: *Masdevallia veitchiana* var. *biflora* Rchb.f., Gard. Chron. n.s. 19: 662, 1883.

Ety.: From the Latin *biflorus*, "two-flowered," referring to an abnormal production of two flowers.

Syn.: *Masdevallia veitchiana* var. *grandiflora* B.S. Williams, Orch. Grow. Man. ed. 7: 506, 1894.

Plant medium in size to large, terrestrial to lithophytic, caespitose; roots coarse. Ramicauls erect, stout, 3-9 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, thickly coriaceous, 10-18 cm long, the blade very narrowly elliptical-obovate, subacute, 1.5-2 cm wide, gradually narrowed below into the subpetiolate base. **Inflorescence** a large, showy, solitary flower borne by a stout, erect peduncle 30-60 cm long, with a bract on the lower third, from low on the ramicaul; floral bract tubular, ca. 3 cm long; pedicel 4-5 cm long; ovary 10-13 mm long, minutely pitted; **sepals** bright orange or vermilion, shortly pubescent within, the hairs purple and capitate, the dorsal sepal ovate, 50 mm long, 23 mm wide, connate to the lateral sepals for 22 mm to form a cylindrical tube, the acute apex of the triangular free portion contracted into a slender, orange, erect tail ca. 3 cm long, the lateral sepals ovate, 55 mm long, connate 38 mm to form a broadly expanded lamina beyond the sepaline tube, 38 mm wide, the acute apices contracted into slender tails ca. 12 mm long, the contracted base forming a shallow mentum with the column-foot; **petals** white, oblong, 13 mm long, 4 mm wide, the acute apex obscurely and irregularly notched, the labellar margin with a longitudinal callus ending in an obtuse angle above the base; **lip** white, suffused with rose, oblong, 10.5 mm long, 3.5 mm wide, the margins revolute above the middle, the apex obtuse with a low, midline callus, the base subcordate, hinged on the end; **column** white with purple margins, semiterete, 9 mm long, the stout foot 3 mm long with an incurved extension.

PERU: **Cuzco**: in crevices between rocks in mountains near Cuzco, alt. 11,000-13,000 ft., imported by Messrs. Veitch, *R. Pierce s.n.* (Holotype: W); cultivated by Messrs. Veitch, July 1884, *R. Pierce* 820 (K); without locality, 1876, *W. Davis* 45 (W); Urubamba, Convención, Machu Picchu, alt. 2400 m, Feb. 1938, *C. Vargas* 612 (AMES); Machu Picchu, "sunny banks of the ruin walls," alt. 2200 m, 4 Feb. 1939, *H.E. Stork, O.B. Horton & C. Vargas* 10510 (G, K); same area, alt. 2300 m, 29 Apr. 1953, *J.P. Hjerting & E. Petersen* 1573 (C); same area, alt. 7,000 ft., Dec. 1942, *C. Landeman* 3686 (K); same area, 5 Nov. 1957, *P.C. Hutchinson* 1767 (AMES, K, M); same area, alt. 2700 m, 30 Apr. 1960, *W. Hoffmann* 213 (B); same area, alt. 2800 m, 13 May 1963, *J. Renz* 10189 (BAS); same area, alt. 2450 m, 15 Apr. 1971, *J.G. Hawkes et al.* 5180 (C); road to Huiñayhuayna, alt. 2800 m, 7 May 1976, *R. Chávez A.* 3410 (MO); Huayna Picchu, alt. 2800 m, 23 June 1936, *J. West* 6449 (AMES, UC); Huayna Picchu, alt. 9,000 feet, 28 Mar. 1959, *S. Saunders* 439 (BM); above Pauqarcanche, alt. 3310 m, 3 May 1982, *B. Payton & S. Tilney Payton* 138 (F, MO, NY, SMF); without locality or collector, cultivated by M. & O. Robledo at La Ceja, Colombia, 12 Oct. 1977, *C. Luer* 2002 (SEL).



Bryologist Richard Pierce first discovered this species in 1867 growing among rocks in the high mountains of Peru, and plants were successfully sent to England where they were introduced into the trade by the firm of Messrs. Veitch & Sons. Professor Reichenbach honored the firm by bestowing their name upon the new species. Such a great demand developed for the plant that the firm soon dispatched their collector Davis to the scene to collect thousands more for the European trade. A byproduct of this excursion was *M. davisii*.

Growing in the full, intense, tropical sun at high altitudes, this spectacular species was once plentiful among the stony Inca ruins at Machu Picchu and Huayna

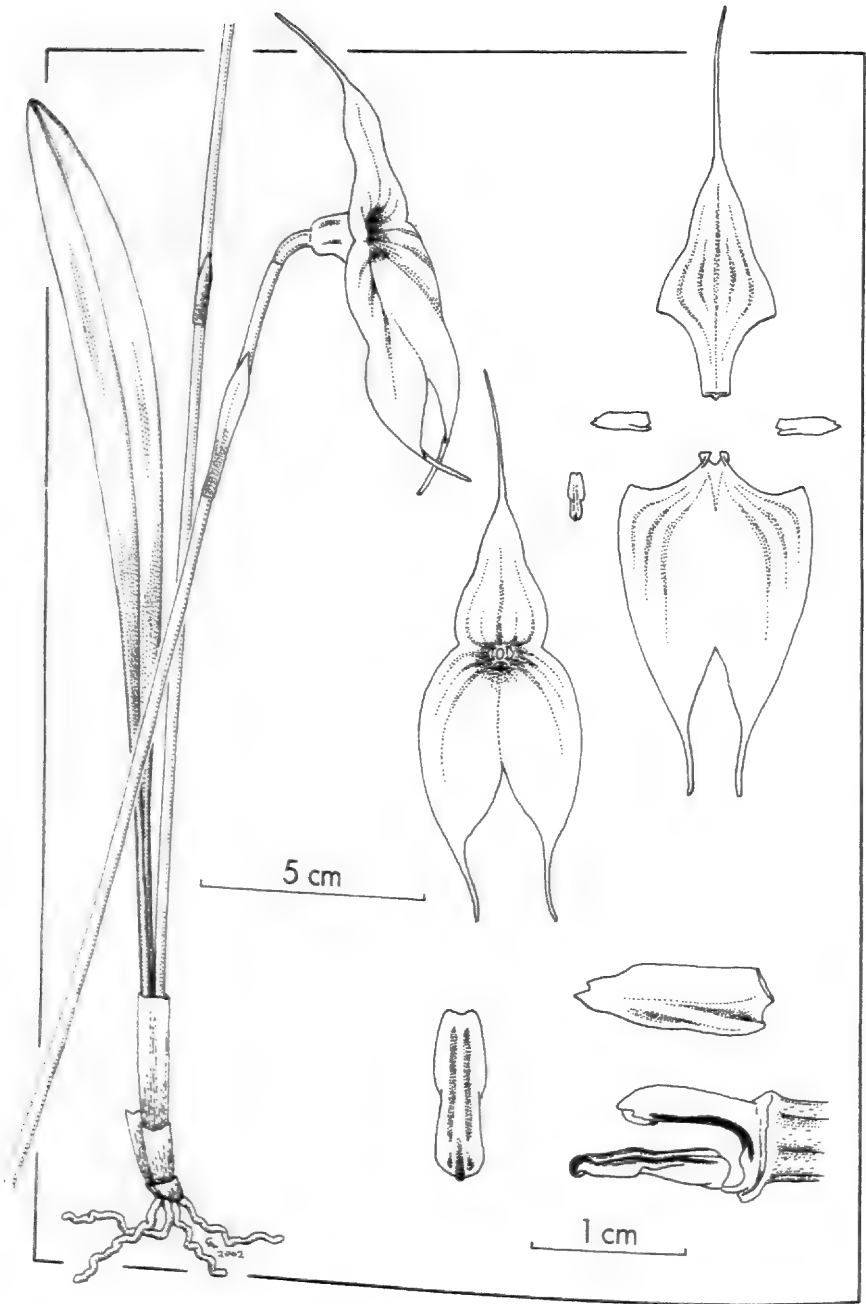


Plate 561. *Masdevallia veitchiana*

Picchu, but collectors have almost exterminated it from these areas. This relentless collecting is needless because the plant is commercially available from seed. Numerous named hybrids are also on the market as they have been for the past century.

Vegetatively and florally, *M. veitchiana* is variable in size and color, only partially explained by growing conditions. The dimensions given in the above description are those taken from an average plant. Much smaller and much larger flowers are encountered. On well-grown plants the flowers attain their greatest beauty. The vermilion color appears to have a velvety, purple suffusion, but when examined under a strong lens, the surface is seen to be covered by purple, capitate hairs.

XDracuvallia Memoria Maria Arcila (Sanin ex Richardson) Luer & Escobar, *Selbyana* 2: 191, 1978.

Bas.: *XMasdevallia* Memoria Maria Arcila Sanin ex Richardson, *Orquideología* 12: 72, 1977.

Ety.: Named in honor of Sra. Maria Arcila, mother of Dr. Carlos Sanin who created the cross.

Plant medium in size, caespitose; roots coarse. Ramicauls erect, stout, 2-4 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, narrowly elliptical, acute, 8-12 cm long including an indistinct petiole, 1.8-2.2 cm wide, gradually narrowed below to the subpetiolate base. **Inflorescence** a showy, solitary flower, borne by a slender, erect peduncle, 18-23 cm long, from low on the ramicaul; floral bract tubular, oblique, 18-22 mm long; pedicel 18-20 mm long; ovary 7-8 mm long, round in cross-section; **sepals** bright orange, suffused with red centrally, glabrous externally, cellular-glandular within, the dorsal sepal ovate, 33 mm long, 25 mm wide, connate to the lateral sepals for 15 mm to form a conical, sepaline cup, the apex obtuse, contracted into a slender, erect tail 4 cm long, orange below, becoming green above, the lateral sepals ovate, oblique, 45 mm long, 24 mm wide, connate 20 mm to form a broad, shallow mentum, the apices subacute, contracted into slender tails ca. 3 cm long; **petals** white, marked with red-brown, oblong, 7 mm long, 2.5 mm wide, with the apex obtuse, minutely papillose on the inner surface, with a low, smooth callus above the base; **lip** orange, subpandurate-obovate, 11 mm long, 5 mm wide above the middle, the epichile ovoid, shallowly concave with 3 carinae, the hypochile sulcate between continuations of the lateral carinae from the epichile, the base subcordate, hinged to the column-foot; **column** white, stout, semiterete, 6 mm long, with a stout foot 4 mm long.

COLOMBIA: flowered in cultivation by Colomborquideas, 21 July 1978, *C. Luer 2351* (SEL).

The first intergeneric hybrid with a species of this subsection and a species of *Dracula* was created by Sr. Sanin of Medellín, Colombia, with *M. veitchiana* and *D. chimaera* (Rchb.f.) Luer as parents. It was registered in 1977 as *XMasdevallia Memoria Maria Arcila*.

This attractive hybrid bears on an erect peduncle a large, bright orange flower that more closely resembles the *Masdevallia* parent than *Dracula chimaera*. The tails are relatively short. The petals and lip reveal the *Dracula* parentage. The petals are minutely papillose near the margin of the apex, and the lip is indistinctly divided into a shallowly cleft hypochile, and a tricallous epichile.

Other intergeneric hybrids have been created in recent years, but none has yet surpassed this hybrid in beauty and popularity.

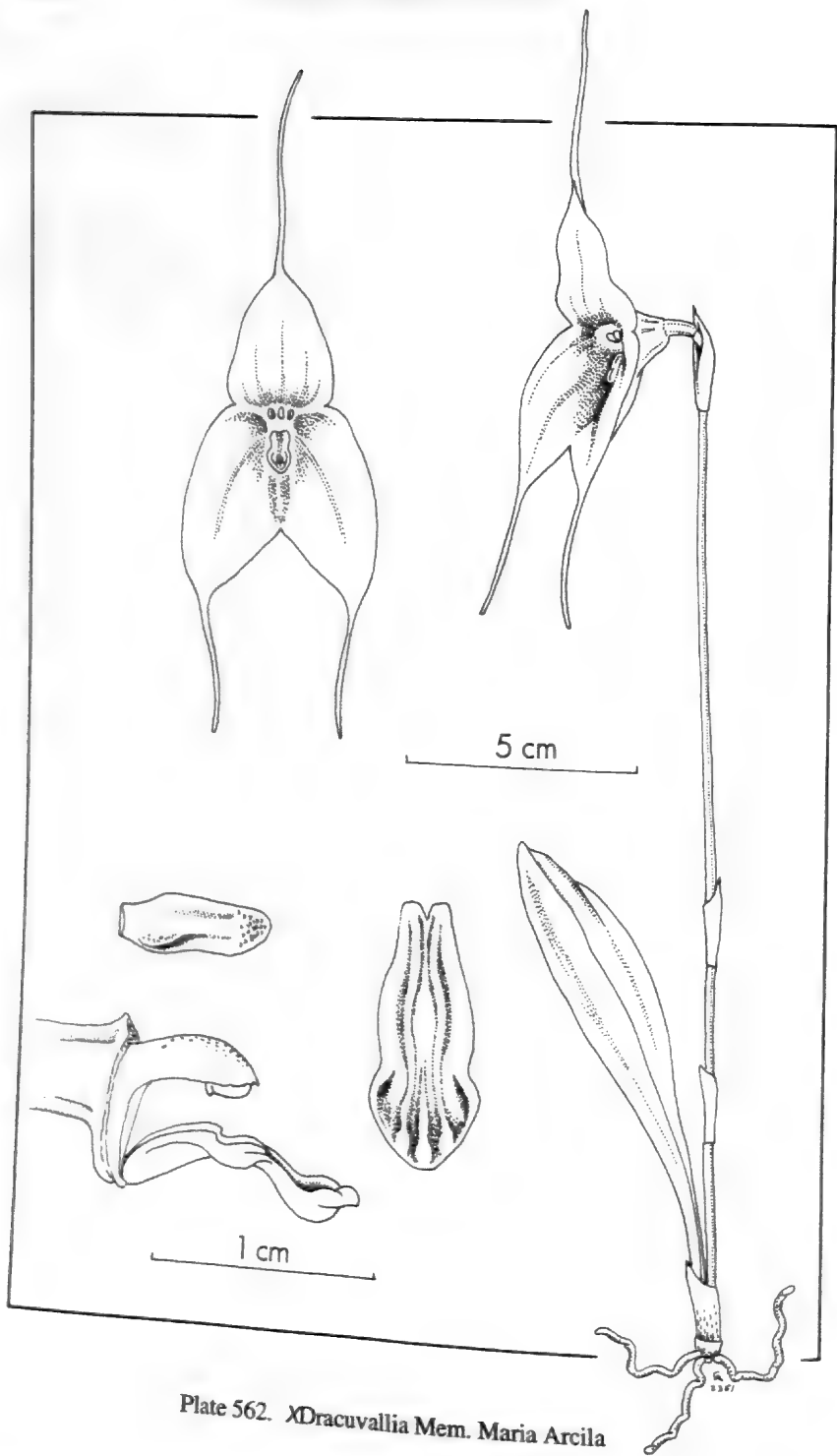


Plate 562. *XDracuvallia Mem. Maria Arcila*

Masdevallia welischii Luer, *Selbyana* 5: 152, 1979.

Ety.: Named in honor of the late David Alan Welisch of San Francisco, CA, who discovered this species.

Plant medium in size, lithophytic, caespitose; roots coarse. **Ramicauls** stout, erect, 2.5-4.5 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, thickly coriaceous, 7-11 cm long including an indistinct petiole 1.5-2 cm long, the blade narrowly elliptical, subacute to acute, 1.5-2.2 cm wide, gradually narrowed below into the channeled petiole. **Inflorescence** a solitary, showy flower borne by a relatively slender, ascending to suberect peduncle, 12-18 cm long, with a bract below the middle, from low on the ramicaul; floral bract 1.5-2 cm long; pedicel 2-4 cm long; ovary 0.5-0.7 cm long; **sepals** bright orange, the dorsal sepal obovate-spathulate, the blade 25 mm long, 13 mm wide at the expanded orifice of the tube, connate 14 mm into a cylindrical tube, the free portion ovate, the apex subacute, contracted into an erect, slender, dark red-brown tail 15 mm long, the lateral sepals suffused with red toward the base, more or less obovate, oblique, 36 mm long, connate 24 mm into an expanded lamina 26 mm wide, with the apices subacute, contracted into slender, red-brown tails 6 mm long; **petals** white, narrowly oblong-ovate, 10 mm long, 2.5 mm wide, the acute apex obscurely lobed, the labellar margin with a longitudinal callus ending in a short, retrorse tooth above the base; **lip** white, suffused with purple at the apex, oblong, thin, 7 mm long, 2.75 mm wide, the apex subacute with a black callus, the disc shallowly sulcate between a pair of low, longitudinal calli, the base subcordate, hinged beneath; **column** white, suffused with purple, semiterete, 7 mm long, the foot stout, 3 mm long with an incurved extension.

PERU: **Cuzco**: La Convención, Vilcabamba mountains near Yanama, on exposed rocks, alt. 3000 m, Oct. 1978, collected by D. Welisch, cultivated in San Francisco, 15 Aug. 1979, *C. Luer 4085* (Holotype: SEL); same collection, cultivated by Pui Y. Chin in San Francisco, 7 July 1989, *C. Luer 14401* (MO); same collection, cultivated at Colomborquídeas, 18 Mar. 1989, *C. Luer 14244* (MO). **Apurímac**: Quishuala, Abancay, alt. 11,000 ft., 16 May 1939, *E. K. Balls B6905* (BM, E, K, US).

This spectacular species was discovered growing on exposed rocky slopes by David Welisch in a remote, mountainous area of Peru in 1978 while he was searching for the long-lost *M. davisii*. Plants flowered in cultivation the following year. A collection of this species made in 1939 by Edward K. Balls and deposited at K was identified as *M. davisii* by O.O. Williams.

Similar to *M. davisii* and *M. veitchiana* both in habit and habitat, *M. welischii* is easily distinguished by the bright orange color of the sepals and a pubescence of the dorsal sepal that glows with a blue iridescence in sunlight. The hairs are pointed, not clavate as in *M. veitchiana*. The petals and lip are narrow and acute.



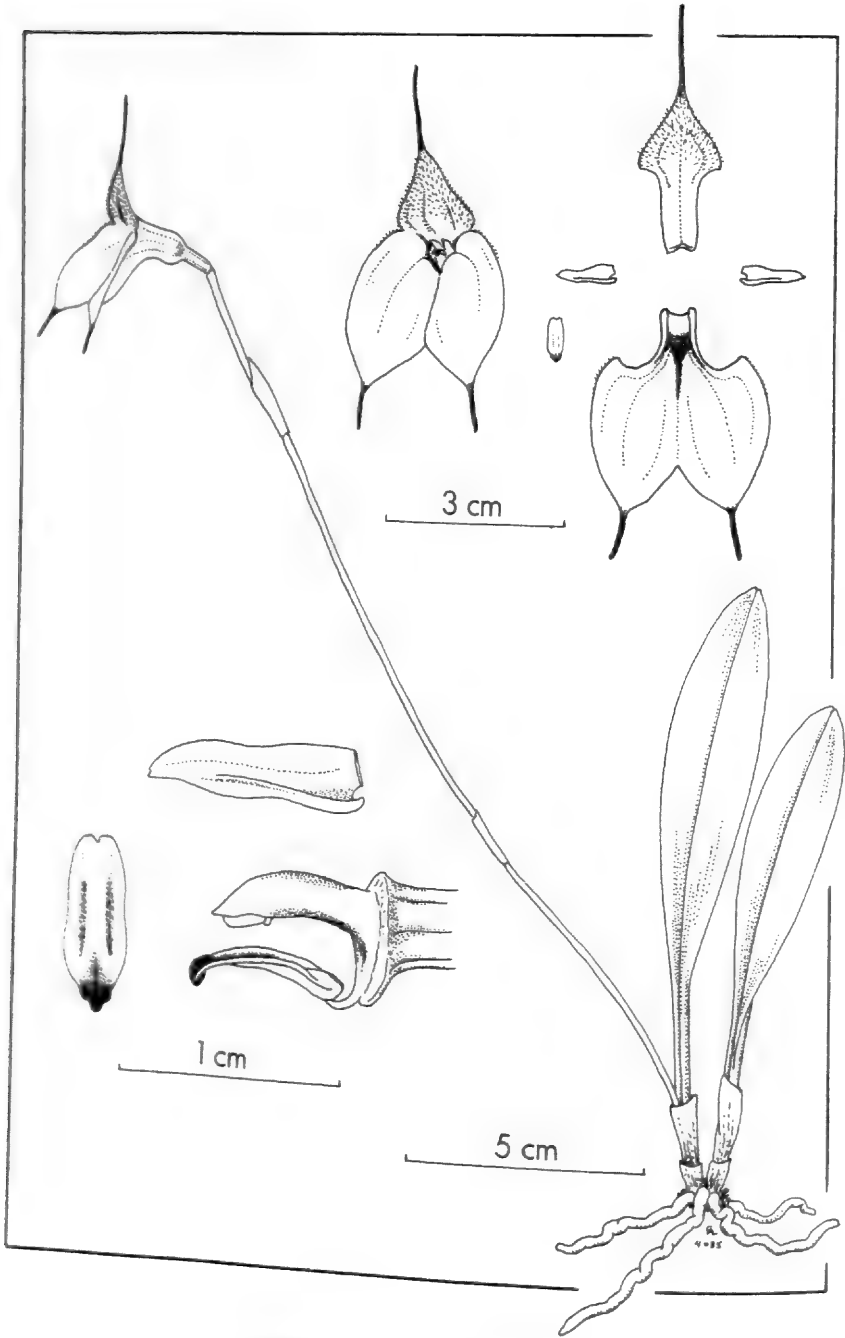


Plate 563. *Masdevallia welischii*

MASDEVALLIA SECTION RACEMOSAE

Masdevallia subgenus **Masdevallia** section **Racemosae** Woolward, The Genus *Masdevallia* sect. IX, 1896.

Type: *Masdevallia racemosa* Lindl., Ann. Mag. Nat. Hist. ser. 1, 15: 256, 1845.

Ety.: From the Latin *racemosus*, "racemose," referring to the inflorescence.

The species of this unispecific section is unique in the genus by virtue of the long-repent habit; a loose inflorescence of successive and simultaneous flowers; deeply connate sepals without tails; elliptical, acute petals; and a simple, oblong lip.

Masdevallia racemosa Lindl., Ann. Mag. Nat. Hist. ser. 1, 15: 256, 1845.

Ety.: From the Latin *racemosus*, "racemose," referring to the inflorescence.

Syn.: *Masdevallia racemosa* var. *crossii* hort., Gard. Chron. n.s. 20: 691, 1883. Nomen nudum.

Plant medium in size, terrestrial, long-repent, with the rhizome stout, 1-3 cm long between ramicauls; roots slender. Ramicauls stout, ascending to erect, 2-4 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, thickly coriaceous, subpetiolate, 4-8 cm long including a petiole 1.5-2.5 cm long, the blade narrowly elliptic, subacute, 1.5-2.5 cm wide, the base narrowly cuneate into the indistinct petiole. **Inflorescence** a loose, successively few- to several-flowered raceme, usually 2 flowers open simultaneously, 10-15 cm long, borne by a slender, erect, purple peduncle 10-15 cm long, with a bract near the middle, from near the middle of the ramicaul; floral bract infundibular, 6-8 mm long; pedicel 10-12 mm long; ovary dotted with red, subverrucose, 4-5 mm long; **sepals** bright red-orange, suffused with darker red-orange along the veins, glabrous externally, sparsely short-pubescent within, the dorsal sepal oblong, abruptly dilated in the distal third, 20 mm long, 10 mm wide expanded, connate to the lateral sepals for 16 mm to form a cylindrical sepaline tube, the dilated free portion broadly ovate, with the obtuse apex produced into an acuminate apiculum, the lateral sepals 25 mm long, connate 23 mm into a lamina that is oblong below the middle, 8 mm wide, abruptly dilated beyond the tube into a subquadrate lamina 22 mm wide, with the diverging apices rounded, each with a minute acuminate apiculum; **petals** yellowish white, elliptical, acute, 7 mm long, 2.25 mm wide, the labellar half with a low, elliptical callus; **lip** white, oblong, 7.5 mm long, 1.8 mm wide, the apex rounded, microscopically erose, the disc shallowly sulcate between a longitudinal pair of low calli, the base cordate, hinged beneath; **column** light yellow, suffused with rose, semiterete, 6 mm long, with the apex erose, foot 2 mm long, with a short, incurved extension.

COLOMBIA: **Cauca:** above Popayán, Páramo de Puracé, silva Pitayo, alt. 10,000-14,500 m, 1843, T. Hartweg 1432 (Holotype: K, Isotypes: BM, G, LD, P, W); Páramo de Puracé, alt. 3300 m, Feb. 1938, K. von Sneider 1750 (S); Páramo de Puracé, San Francisco, alt. 3400 m, 23 July 1943, J. Cuatrecasas 14670 (AMES); Páramo de Puracé, alt. 3300 m, 11 Oct. 1961, J. Cuatrecasas & L. Willard 26312 (US); Puracé, Río Vinagre, corregimiento Chibchiquará, alt. 3250 m, 15 Jan. 1991, R. Ruiz & Cortés 1235 (MO); above Popayán, alt. 2900-3400 m, May 1878, F.C. Lehmann 6751 (AMES, G, K, LE, US, W); Páramo de Delicias, F.C. Lehmann B.T.183 (AMES, W); Páramo de Moras, alt. 3000-3800 m, 29 Oct. 1882, F.C. Lehmann 2098 (AMES, BM, K, LE, US); Páramo de Moras, alt. 2900-3600 m, 16 Mar. 1884, F.C. Lehmann 966 (G, K); Páramo de Barbillas, alt.



3070 m, 27 July 1978, C. Luer, J. Luer & R. Escobar 3044 (AMES, K, MO, SEL); Páramo de Barbillas, alt. 3150 m, 13 Nov. 1982, C. Luer, J. Luer, R. Escobar & A. Lehmann de Sarria 8350, 8385 (AMES, SEL); Río Vinagre, east of Popayán, alt. 2800 m, 7 Nov. 1948, S. Ypres, J. Arague & F. Barkley (US); between Popayán and Totoró, alt. 3200 m, 18 July 1948, H. García-Barriga & J.G. Hawkes 12708 (US); Quebrada Monchai, northeast of Silvia, alt. 3200 m, 22 Oct. 1946, O. Haught 5119 (US); Paletara, east of "Llano," alt. 3100-3300 m, 15 June 1922, F.W. Pennell 7010 (AMES, K, US); Valle de Quintero, Río Palo, alt. 2500-3000 m, 4 Feb. 1906, H. Pittier 1420 (AMES, US); without collection data, cultivated by M. & O. Robledo at La Ceja, 12 Oct. 1977, C. Luer 2004 (SEL).

This species is endemic in subparamo forests at a high altitude in southern Colombia where it was first discovered by Theodore Hartweg in 1843. Carder of Messrs. Shuttleworth & Carder was the first to succeed in exporting living plants to Europe in 1883. When first offered at their sale, a dried plant with at least ten flowers carefully arranged on the raceme was displayed. An illustration with 14

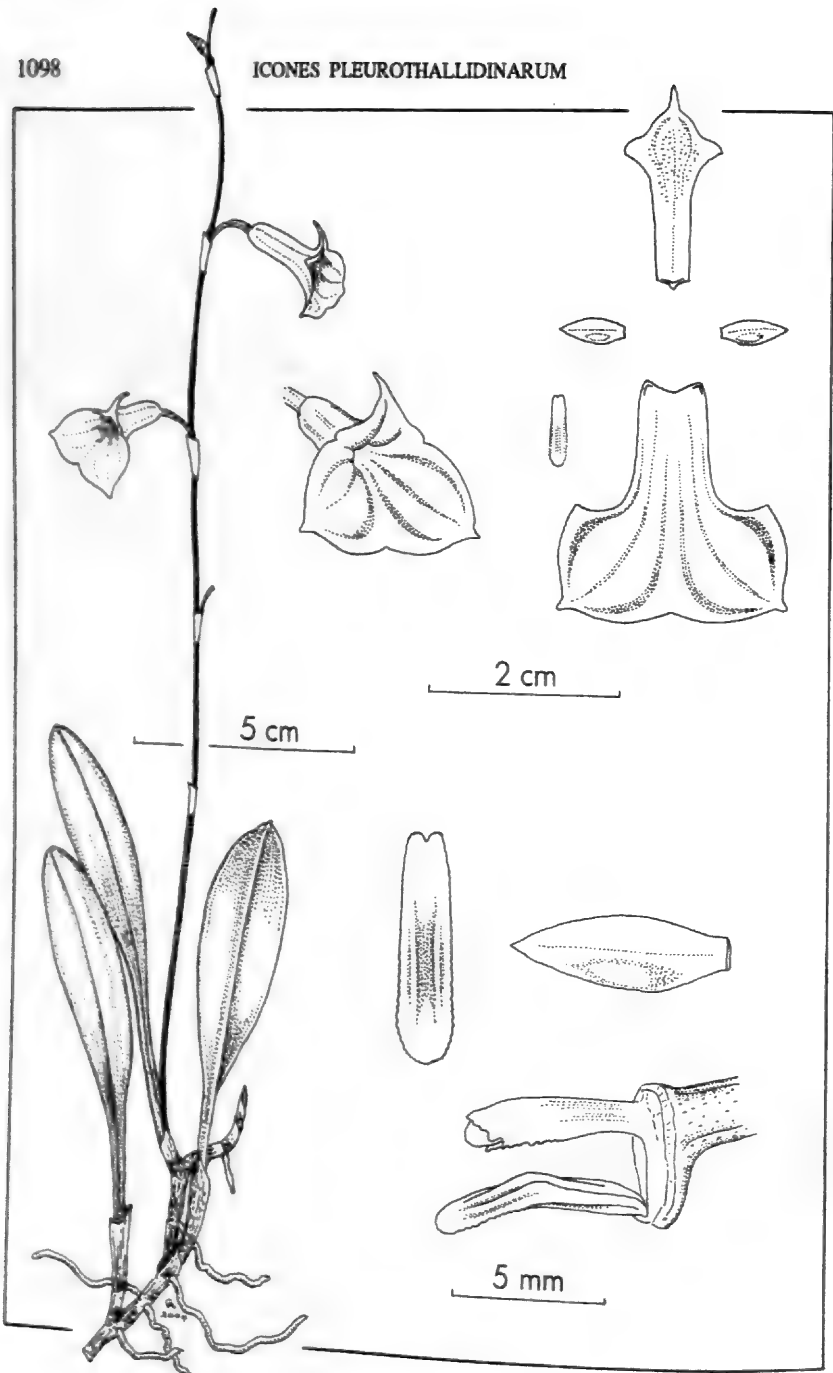


Plate 564. *Masdevallia racemosa*

simultaneous flowers was published in the *Gardeners' Chronicle* and in Veitch's *Manual of Orchidaceous Plants*.

Masdevallia racemosa grows at altitudes over 3000 meters above sea level in the shade of large trees where it creeps in the cool, loose, leafy humus. The successively flowered racemes usually bear no more than two scarlet flowers open at one time, but as many as 18 may eventually be produced. The sepaline tube is cylindrical below the middle where the obtuse, tailless sepals abruptly expand.

MASDEVALLIA SECTION TRIOTOSIPHON

Masdevallia sect. **Triotosiphon** (Schltr.) Sweet, Bot. Mus. Leafl. 26: 40, 1978.

Type: *Masdevallia bangii* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 10: 41, 1922.

Ety.: From the Greek *triotosiphon*, "a three-eared tube," referring to the short, sepaline lobes.

Syn.: *Masdevallia* subgen. *Triotosiphon* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 10: 42, 1922.

Type: *Masdevallia bangii* Schltr.

This taxon was suggested by Schlechter as subgenus *Triotosiphon* when he described Bang's collection of a minute Bolivian species. However, this taxon meets the criteria for subgenus *Masdevallia*. Among the numerous species of the subgenus, the few closely related species that constitute this taxon are treated here as another section. Six species are recognized, four from coastal Venezuela, and two from the eastern declivities of the Andes.

Vegetatively, the small to very small, caespitose plants bear single, more or less tubular, kyphose (humpbacked) flowers constricted above the middle. The free portions of the sepals are short, thick and similar to each other. Simply on the basis of deep connation of the sepals, some of the species had been mistakenly transferred to *Physosiphon*. Although calliferous petals are one of the primary distinctions of *Masdevallia*, the callosity of the petals of some individuals of species of this section are vestigial or wholly lacking. The lips are simple and oblong, and channeled between longitudinal calli.

BINOMIALS IN MASDEVALLIA ATTRIBUTABLE TO SECTION TRIOTOSIPHON

M. bangii Schltr.	Plate 565.
M. gnoma Sweet	Plate 566.
M. irapana Sweet	Plate 567.
M. kyphonantha Sweet.....	Plates 568A, 568.
M. lansbergii Rchb.f.	Plate 569.
<i>M. pseudominuta</i> Sweet = M. kyphonantha	
<i>M. trioön</i> Sweet = M. bangii	
M. venezuelana Sweet.....	Plate 570.

KEY TO THE SPECIES

- 1 Sepals connate to about the middle; petals dilated at the obtuse apex.....
 *M. venezuelana*
- 1' Sepals connate to above the middle2
- 2 Sepals with the free portions narrowly triangular, acute; petals obovate, obtuse....
 *M. kyphonantha*
- 2' Sepals with the free portions ovate, subacute to obtuse.....3
- 3 Petals broadest at the apex, truncate-tridentate.....*M. lansbergii*
- 3' Petals not truncate-tridentate4
- 4 Lip with the apex erose, verrucose.....*M. irapana*
- 4' Lip not verrucose at the apex5
- 5 Petals oblong, not dilated; lip with longitudinal calli converging at the thickened base.....*M. bangii*
- 5' Petals with the labellar margin dilated below the middle with a callus; lip with longitudinal calli not converging, the base concave.....*M. gnoma*

Masdevallia bangii Schltr., Repert. Spec. Nov. Regni Veg. Beih. 10: 41, 1922.
 Ety.: Named in honor of its discoverer, Miguel Bang.

Syn.: *Physosiphon bangii* (Schltr.) Garay, Canad. J. Bot. 34: 249, 1956.

Syn.: *Masdevallia trioön* Sweet, Bot. Mus. Leaflet. 26: 46, 1978.

Ety.: From the Greek *tri-oon*, "three eggs," referring to the ovoid, free segments of the sepals.

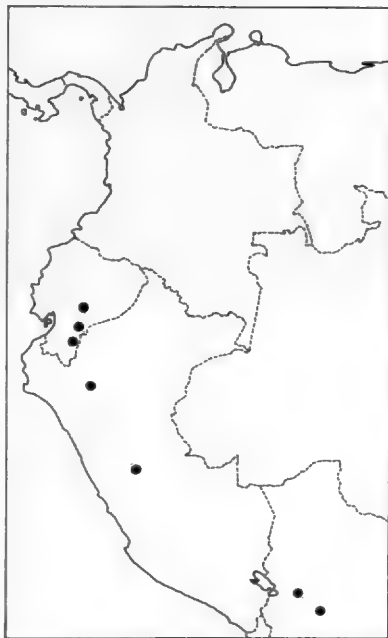
Plant very small, epiphytic, densely caespitose; roots slender. Ramicauls slender, blackish, erect, 2-10 mm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, thickly coriaceous, narrowly obovate-linear, obtuse to subacute, 15-35 mm long, 2-4 mm wide, 2 mm thick, narrowly cuneate below into the indistinctly petiolate base. **Inflorescence** a solitary flower borne by a slender, erect to suberect peduncle 5-25 mm long, with a bract near the base, from low on the ramicaul; floral bract 2.5-4 mm long; pedicel 3-5 mm long; ovary 2-4 mm long; **sepals** whitish to pale yellow or light yellow-green, glabrous, the dorsal sepal narrowly oblong-ovate, 8-11 mm long, 1.5-2 mm wide expanded, concave, connate 4.5-8 mm to the lateral sepals to form a lightly arcuate, cylindrical, sepaline tube, more or less dilated dorsally and constricted above the middle, the free portion yellowish, thickened, ovate, subacute to obtuse, 3-4.5 mm long, the lateral sepals 7-10 mm long, connate 4-5 mm, 2-4 mm wide expanded, the free portions thick, ovate, subacute to obtuse, 3-4.5 mm long; **petals** translucent white, membranous, elliptical-oblong, 2-3 mm long, 0.6-1 mm wide, the apex acute, obtuse, to subtruncate, or with an obtuse apiculum, the labellar margin with a low, rounded callus below the middle, the callus sometimes lacking; **lip** yellow, yellow-green or orange, narrowly oblong, 2.5-3 mm long, 0.6 mm wide, the apex subacute to subtruncate, more or less minutely erose, the disc with a pair of low, longitudinal, intramarginal calli from the base to above the middle where they end with suberect angles, the base thickened with the confluence of the calli, subtruncate or subcordate, hinged on the end; **column** white to green, semiterete, 2-2.5 mm long, the foot thick, 1 mm long with a minute, incurved extension.

BOLIVIA: La Paz: Nor Yungas, Coroico, 8 Sept. 1884, *M. Bang* 2424 (Lectotype: AMES, here designated; Isolectotypes: BM, E, G, K, LE, M, MO, NY, S, US, W); near Asunta, alt. 2800 m, 8 June 1921, *O.E. White* 632 (AMES); below Chuspipata toward Yolosa, alt. 2150 m, 19 July 1982, *J.C. Solomon* 8081 (MO); cloud forest west of Coroico, alt. 1820 m, 27 Jan. 1983, *C. Luer, J. Luer & R. Vásquez* 8589 (SEL). **Cochabamba:** Chapare, forest west of Villa Tunari, alt. 1200 m, 8 Feb. 1980, *C. Luer, J. Luer & R. Vásquez* 5195 (SEL).

PERU: Amazonas: between Chachapoyas and Pomacochas, alt. 2000 m, Aug. 1978, collected by B. Würstle et al., cultivated May 1980, *C. Luer* 5293 (SEL). **Huánuco:** between Tingo María and Pucallpa, alt. 1600 m, June 1981, *M. Arias* A-28 (K, M, SEL, USM, W, Herb. H. König); same collection, cultivated by B. Würstle in Spielberg, Germany, 7 Sept. 1981, *C. Luer* 6467 (SEL).

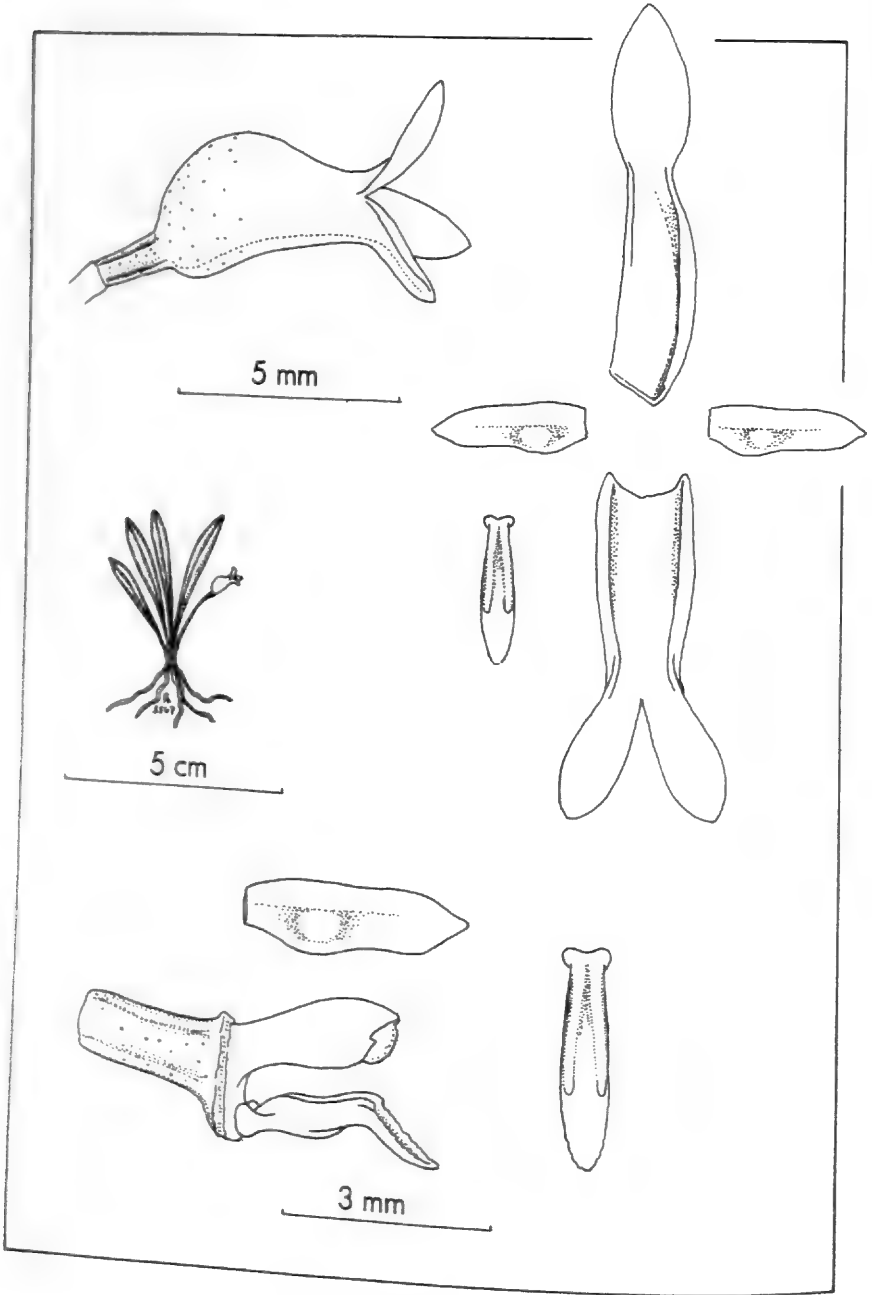
ECUADOR: Morona-Santiago: Cordillera del Cutucú, between Mendez and Morona, alt. 950 m, 17 Jan. 1989, *C. Luer, J. Luer, P. Jesup, A. Jesup, A. Hirtz & S. Ortega* 13961 (MO); Cordillera del Condor east of Chuchumbleta, alt. 1750 m, 21 May 1988, *C. Luer, A. Hirtz, W. Flores, A. Andreetta & W. Teague* 13567 (MO). **Zamora-Chinchipe:** near Zamora, alt. 1000 m, collected by B. Malo, cultivated at Tarqui, 27 Sept. 1980, *C. Luer* 5567 (SEL); south of Zamora along Río Jamboe, alt. 1000 m, 24 Jan.

1992, *C. Luer, J. Luer, P. Jesup, A. Jesup & A. Hirtz* 16148; Cordillera del Condor, *M. Fiske* s.n. (holotype of *M. trioön*: AMES); Cordillera del Condor east of Los Encuentros, alt. 1550 m, 18 May 1988, *C. Luer, A. Hirtz, W. Flores, A. Andreetta & W. Teague* 13463 (MO); Cordillera del Condor, Nambija, alt. 1300 m, *A. Hirtz* 5510 (MO).



This tiny species is widely distributed, locally abundant, and variable in its wide range through the eastern slopes of the Andes from southern Ecuador into Bolivia, where it was first collected in 1884 by Miguel Bang. The sepals are deeply connate into a very small, solitary, white, tubular flower constricted above the middle, and dilated dorsally (kyphose) below the middle. Garay had transferred the species to *Physosiphon* because of the deeply connate sepals. The free portions are shorter, thick and obtuse. The size of the flowers varies with the lengths of the sepals between eight and eleven millimeters. Plants from the Cordillera del Condor in southeastern Ecuador, described as *M. trioön*, are small, but certainly conspecific with *M. bangii*.

The petals and lip hidden deep within the sepaline tube are variable in morphology. The membranous, oblong petals often lack any thickening on the labellar half, one of the most reliable features for identification of the genus. The lip is narrowly oblong with a longitudinal pair of intramarginal calli extending from obtuse angles above the middle and merging toward the thickened base. The apex is variably rounded to subtruncate, and sometimes microscopically erose.

Plate 565. *Masdevallia bangii*

Masdevallia gnoma Sweet, Bot. Mus. Leaf. 26: 41, 1978.

Ety. From the Latin *gnomus*, "a dwarf," referring to the small habit of the plant.

Plant very small, epiphytic, densely caespitose; roots slender. Ramicauls slender, blackish, erect, 2-5 mm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, thickly coriaceous, narrowly obovate-linear, obtuse to subacute, 15-35 mm long, 2-3 mm wide, 1.5-2 mm thick, narrowly cuneate below into the indistinctly petiolate base. **Inflorescence** a solitary flower borne by a slender, erect to suberect peduncle 15-25 mm long, with a bract near the base, from low on the ramicaul; floral bract 3-3.5 mm long; pedicel 4-5 mm long; ovary blackish, 2-4 mm long; **sepals** pale yellow or light yellow-green, glabrous, the dorsal sepal narrowly oblong-ovate, 11-16 mm long, 2 mm wide expanded, concave, connate 6-8 mm to the lateral sepals to form a lightly arcuate, cylindrical, sepaline tube, more or less dilated dorsally and constricted above the middle, the free portion orange, thickened, narrowly ovate, acute, 4-7 mm long, the lateral sepals 10-14 mm long, connate 4-6 mm, 3-4 mm wide expanded, the free portions thick, narrowly ovate, acute, 4-6 mm long; **petals** translucent white, membranous, linear-ovate, 2.5-3 mm long, 0.8-1 mm wide, the apex obtuse, to subtruncate, or with an obtuse apiculum, the labellar dilated below the middle with a low, rounded callus; **lip** yellow or yellow-orange, oblong, 2.5-3 mm long, 1 mm wide, the apex subtruncate, more or less minutely erose, the disc with a pair of low, longitudinal calli with erect, obtuse angles near the middle, the disc shallowly sulcate between the calli, the base shallowly concave, subtruncate or subcordate, hinged on the end; **column** white to green, semiterete, 2.5 mm long, the foot thick, 1 mm long with a minute, incurved extension.

ECUADOR: **Napo**: vicinity of Papallacta, without date or altitude, *Stacy s.n.* (Holotype: AMES). **Morona-Santiago**: epiphytic near Bomboiza, alt. 1000 m, collected by A. Andreetta, cultivated in Cuenca, 18 Aug. 1978, *C. Luer 3318* (SEL); epiphytic near Río Calagrás, alt. ca. 1500 m, collected by A. Andreetta, cultivated in Cuenca, 6 Nov. 1982, *C. Luer 8291* (SEL); Río Calagrás, north of Gualaquiza, alt. 1500 m, Nov. 1982, *C. Luer & R. Escobar 8854* (SEL). **Pastaza**: epiphytic in forest east of Puyo, alt. ca. 1000 m, 28 July 1975, *C. Luer, G. Luer & S. Wilhelm 652* (SEL).



This tiny species is extremely similar to the frequent, variable, and widely distributed *M. bangii*. It occurs on the eastern slopes of the Andes of central Ecuador at the northern limit of the distribution of *M. bangii*. The plants and the flowers of the two species are indistinguishable except for the petals and lips hidden within the sepaline tubes. The labellar margins of the petals of *M. gnoma* are dilated below the middle with a more distinct callus.

The petals of *M. bangii* are more or less oblong with the callus often obscure or obsolete. The lip of *M. gnoma* is distinguished by the pair of erect angles near the middle from the longitudinal calli, and the disc above the base is shallowly concave. The lip of *M. bangii* is narrower with longitudinal, marginal calli that converge to form a thick base.

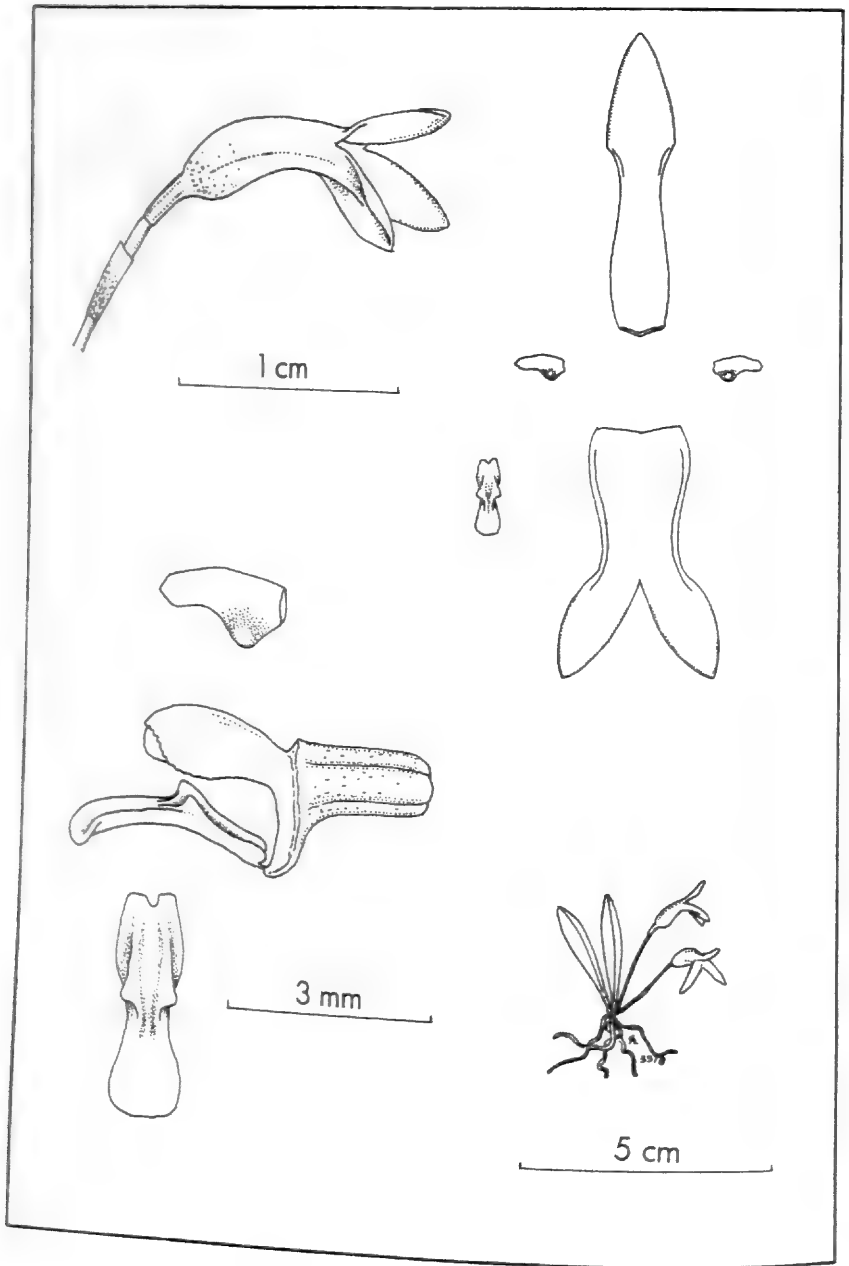


Plate 566. *Masdevallia gnoma*

Masdevallia irapana Sweet, Bot. Mus. Leaf. 26: 42, 1978.

Ety: Named for Venezuelan community of Irapa, near where the species occurs.

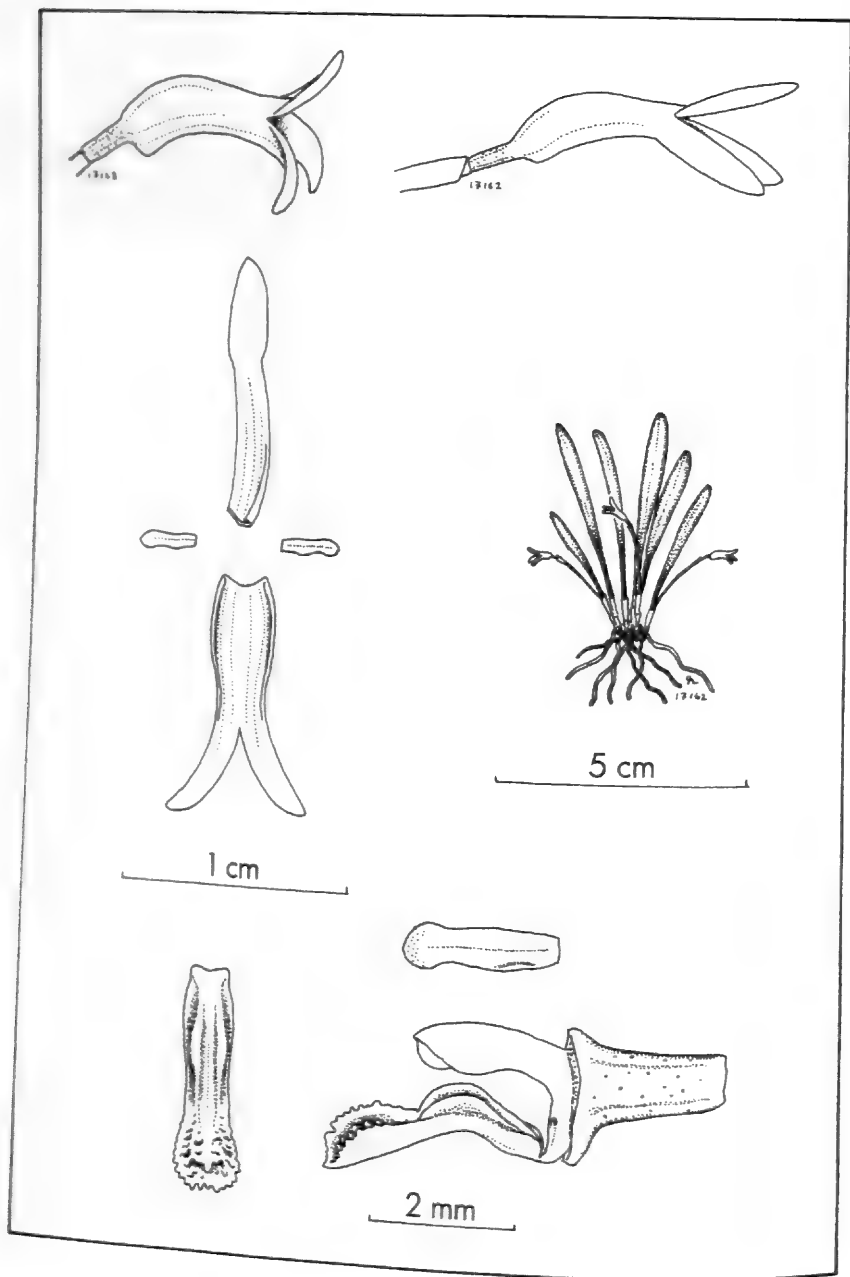
Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, blackish, erect to suberect, 5-10 mm long, enclosed by 2-3 thin, close, tubular sheaths. **Leaf** erect to suberect, coriaceous, 2-4 cm long including an indistinct petiole ca. 1 cm long, the blade narrowly obovate, subacute, 2-4 mm wide in the dry state, gradually narrowed below into the base. **Inflorescence** a solitary flower, borne by a slender, erect to suberect peduncle 10-13 cm long, with a bract above the base, from low on the ramicaul; floral bract tubular, 3.5 mm long; pedicel 3.5 mm long; ovary 2 mm long; **sepals** white, glabrous, connate to above the middle into a narrow, cylindrical tube, dilated below the middle, constricted near or above the middle where the free portions diverge, the dorsal sepal narrowly linear, concave, 8.5-12 mm long, 1.5-2 mm wide, connate to the lateral sepals for 5.5-7 mm, the free portion suffused with orange, narrowly elliptical, acute, 3-5 mm long, 1-1.5 mm wide, the lateral sepals connate 4.5-6 mm into a narrowly ovoid blade, 4-6 mm long, 3 mm wide expanded, the free portions suffused with orange, narrowly elliptical, acute, 3-5 long, 1.25-1.5 mm wide; **petals** translucent white, oblong-spathulate, 2-3 mm long, 0.6-1 mm wide, 1-veined, slightly constricted above the middle, slightly dilated at the broadly obtuse apex, the labellar margin with a nearly obsolete, longitudinal thickening below the middle; **lip** yellow, oblong-subpandurate, 3 mm long, 1 mm wide, the disc sulcate between a pair of broadly rounded, erect calli below the middle, the apex obtuse, fringed, verrucose centrally, the base subtruncate, hinged on the end; **column** greenish white, semiterete, 2 mm long, the foot 1 mm long, with a short, thick, incurved extension.

VENEZUELA: **Sucre**: Peninsula de Paria, Cerro de Humo, northeast of Irapa, alt. 800-1000 m, 5 Mar. 1966, J.A. Steyermark 95079 (Holotype: AMES; Isotype: VEN), C. Luer illustr. 17162; without collection data, G.C.K. Dunsterville 19 (AMES), C. Luer illustr. 17163.

This little species is apparently endemic on the Peninsula de Paria of coastal Venezuela where it was first collected by Julian Steyermark in 1966. Except for being smaller both vegetatively and florally, it is very similar to *M. venezuelana*. As in the latter, the narrowly tubular flowers are constricted near the middle with the orange, thickened, free portions more or less spreading. The translucent and membranous petals are spatulate with the dilated apex obtuse, and with a barely discernible thickening along the labellar margin below the middle. The apex of the lip is fringed and verrucose, and below the middle the disc is sulcate between a pair of broadly rounded, erect calli.

The accompanying illustration includes parts of two specimens. A flower and the parts of the dissected flower were drawn from pickled material preserved by Dunsterville (19), but no vegetative material was preserved. The plant was drawn from Steyermark's collection (95079). A flower hydrated in ammonia confirms that the two collections represent the same species.



Plate 567. *Masdevallia irapana*

Masdevallia kyphonantha Sweet, Bot. Mus. Leaf. 26: 44, 1978.

Ety.: From the Greek *kyphonanthos*, "a humpbacked flower," referring to the arcuate, sepaline tube, more or less dilated dorsally.

Syn.: *Masdevallia pseudominuta* Sweet, Bot. Mus. Leaf. 26: 45, 1978.

Ety.: From the Greek *pseudo-*, "false-," and the epithet *minuta*, in allusion to a vague similarity between this species and *Masdevallia minuta*.

Plant very small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, blackish, 4-10 mm long, enclosed by 2-3 close, tubular sheaths. **Leaf** erect, thickly coriaceous, sulcate, narrowly linear, narrowly obtuse, 2-5 cm long including an indistinct petiole, 2-3 mm wide. **Inflorescence** a small, solitary, white to pale yellow flower, borne by an erect, slender peduncle 10-25 mm long, with a bract below the middle, from near the base of the ramicaul; floral bract tubular, 3-5 mm long; pedicel 4-6 mm long; ovary, 2-4 mm long; **sepals** white, glabrous, the dorsal sepal oblong, concave, 6-10 mm long, 2-3 mm wide expanded, connate to the lateral sepals for 5-9 mm to form an arcuate, cylindrical tube, the free portion yellowish, narrowly triangular, acute, 3-7 mm long, the lateral sepals connate 4-8 mm into a cylindrical lamina, 5-10 mm wide expanded, the free portions yellowish, narrowly triangular, acute, 3-7 mm long; **petals** translucent white, obovate-spathulate, 2.5-3 mm long, 0.8-1.25 mm wide, the apex obtuse to subtruncate, obscurely tridenticulate to obscurely apiculate, usually with a minute, low, rounded callus above the labellar margin between the middle and lower thirds; **lip** orange or white suffused with orange, oblong, 2.5-5 mm long, 1-1.5 mm wide, the disc with a pair of low, longitudinal calli, the apex rounded, minutely erose, cellular-glandular, the base subcordate, hinged beneath; **column** white, semiterete, 2-3.75 mm long, the foot less than 1 mm long, with a minute, incurved extension.

VENEZUELA: **Yaracuy**: El Amparo to Candelaria, 7 km north of Salom, alt. 1250 m, 17 June 1972, J.A. Steyermark 106263 (Holotype: AMES; Isotype: VEN); same collection, cultivated by G.C.K. Dunsterville at El Hatillo, 24 July, 1982, C. Luer 8087 (SEL). **Falcon**: Sierra de San Luís, near Carimagua, alt. 7,000 ft., C. García s.n. sub *Dunsterville 538* (holotype of *M. pseudominuta*: AMES); same collection, cultivated by G.C.K. Dunsterville 1286A at El Hatillo, 27 July 1982, C. Luer 8109 (SEL); without collection data, flowered in cultivation, 4 Sept. 1981, by B. Würsile 1241 (SEL), C. Luer illustr. 6451.

Masdevallia kyphonantha from the coastal mountains of Venezuela is distinguished from its allies by narrowly linear leaves; narrowly triangular free portions of the sepals shorter than a variably arcuate (kyphose) sepaline tube; and spathulate petals obscurely lobed or notched at the apex. The small callus below the middle is sometimes obsolete. The oblong lip is sulcate between a pair of longitudinal calli. The margin of the rounded apex is sometimes microscopically erose.

An illustration of this species was identified as *M. minuta* in *Venezuelan Orchids Illustrated*, Vol. 4. An illustration of *M. minuta* has not been published in *Venezuelan Orchids Illustrated* nor in *The Orchids of Venezuela Field Guide*.

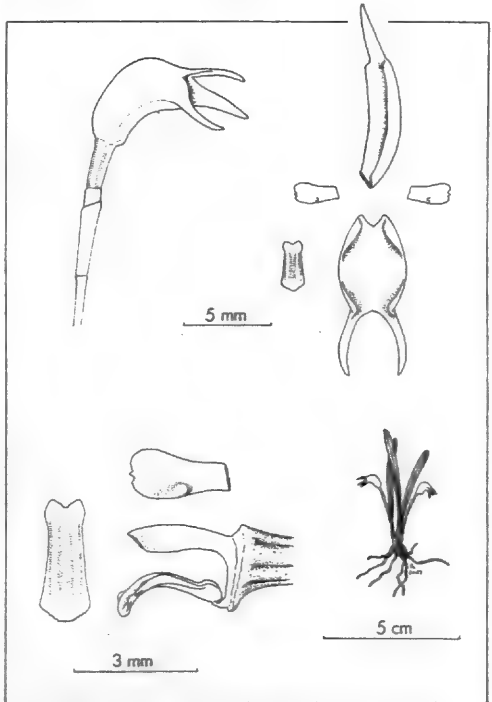


Plate 568A. *Masdevallia kyphonantha*

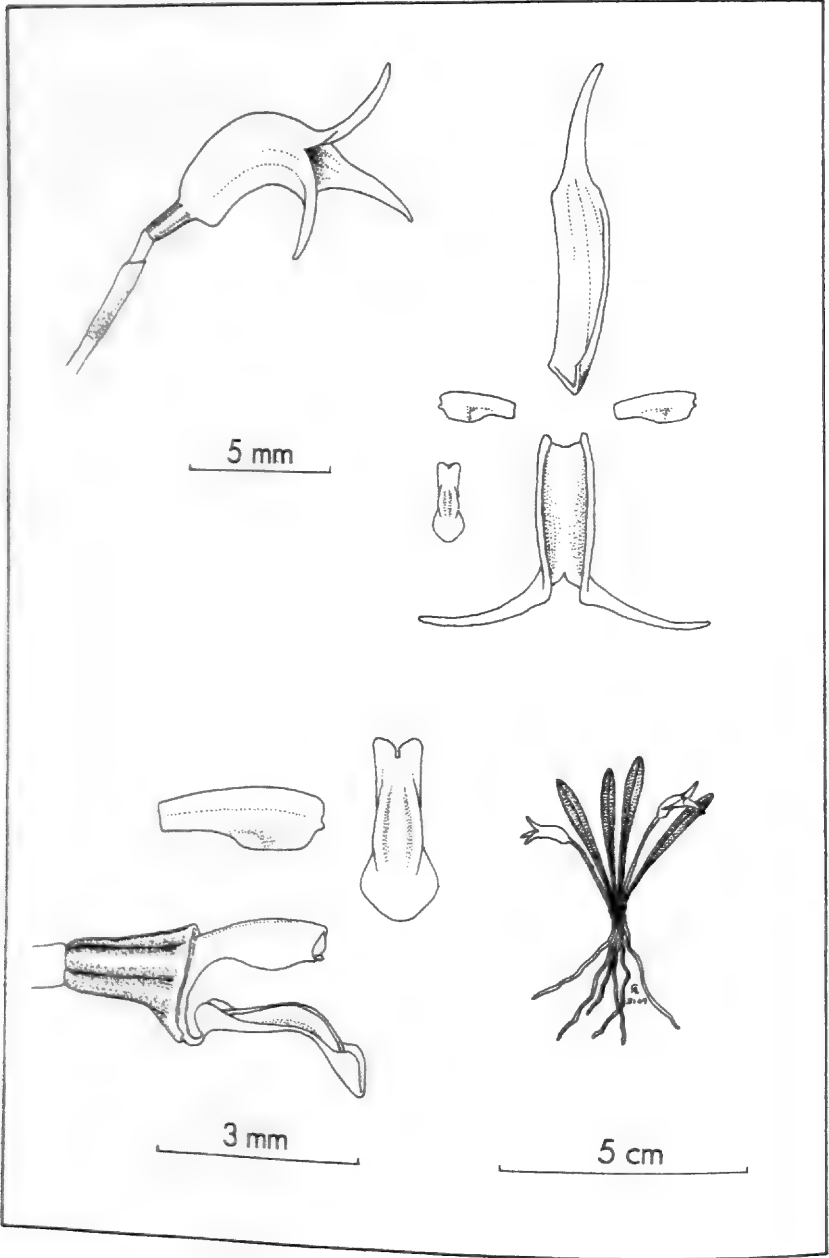


Plate 568. *Masdevallia kyphonantha*

Masdevallia lansbergii Rchb.f., Nederl. Kruidk. Arch. 4: 317, 1859.

Ety.: Named in honor of Reinhart van Lansbergen, Dutch traveler who collected orchids around Caracas.

Syn.: *Physosiphon lansbergii* (Rchb.f.) L.O.Williams, Bot. Mus. Leaflet 7: 138, 1939.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls slender, erect, 6-10 mm long, enclosed by 2-3 close, tubular sheaths. **Leaf** erect, coriaceous, narrowly obovate, subacute to obtuse, 2-6 cm long including an indistinct petiole, 4-6 mm wide. **Inflorescence** a small, solitary, white to pale yellow flower, borne by an erect, slender peduncle 3-5 cm long, with a bract below the middle, from near the base of the ramicaul; floral bract tubular, 5 mm long; pedicel 6-12 mm long; ovary, 2-3 mm long; **sepals** white, glabrous, the dorsal sepal narrowly oblong, concave, 11-19 mm long, 2 mm wide, connate to the lateral sepals for 6-9 mm to form a narrowly ovoid-cylindrical tube, the free portion yellowish, thickened, narrowly triangular, narrowly obtuse to subacute, 5-9 mm long, the lateral sepals connate 6.5-10 mm into a concave lamina, 3-5 mm wide expanded, the free portions yellowish, narrowly triangular, narrowly obtuse to subacute, 5-9 mm long; **petals** translucent white, membranous, linear-oblong, spatulate, 2-2.5 mm long, 0.5 mm wide, widest at the tridentate-truncate apex, with a minute, obtuse callus below the middle on the labellar half which is slightly dilated at this point; **lip** white, oblong, 2.5-3 mm long, 1 mm wide, the margins erect near the middle with obtuse angles, the apex rounded, minutely erose, to cellular-glandular, the disc shallowly concave to the truncate base, hinged beneath; **column** white, semiterete, 2 mm long, the foot less than 1 mm long, with a minute, incurved extension.

VENEZUELA: "Caracas," *R. van Lansbergen* 4 (Holotype: W). **Aragua**: near Colonia Tovar, 1854-55, *A. Fendler* 1369 (AMES, K, MO); without collection data, *A. Fendler* s.n. (W); El Portachuelo, between Maracay and Ocumare, 8 May 1925, *H. Pittier* 11820 (AMES, G, US). Without locality, Mar. 1976, *G.C.K. Dunsterville* 1351; same collection, cultivated by *G.C.K. Dunsterville* at El Hatillo, 27 July 1982, *C. Luer* 8111 (SEL). **Sucre**: Arismendi, Peninsula de Paria, between Tacarigua and headwaters of Río Tacarigua, alt. 700-900 m, 23 Feb. 1980, *J.A. Steyermark*, *R. Liesner* & *V. Careño* 121655 (MO, VEN). **FRENCH GUIANA**: Saül Corradoni, alt. 50 m, 15 Mar. 1986, collector? 1350 (B).



Living plants of this Venezuelan species were probably sent among many others to Holland by van Lansbergen about 1845. No doubt, plants were soon cultivated in several gardens. It is the first of the subsection to be described. The holotype consists of a small, crude drawing of the plant with two flowers.

Vegetatively, *M. lansbergii* is one of the largest of the subsection with leaves up to six centimeters long. The sepals are sometimes 19 mm long, but the average is less. The free portions, about as long as the tube, are narrowly ovate. The slender, membranous petals are diagnostic: broadest at the truncate-tridentate apex. A small callus near the middle is associated with a slight dilation of the margin. The oblong lip is shallowly concave between marginal thickenings that end in obtuse, marginal angles above the middle. The rounded apex of the lip is minutely denticulate-erose.

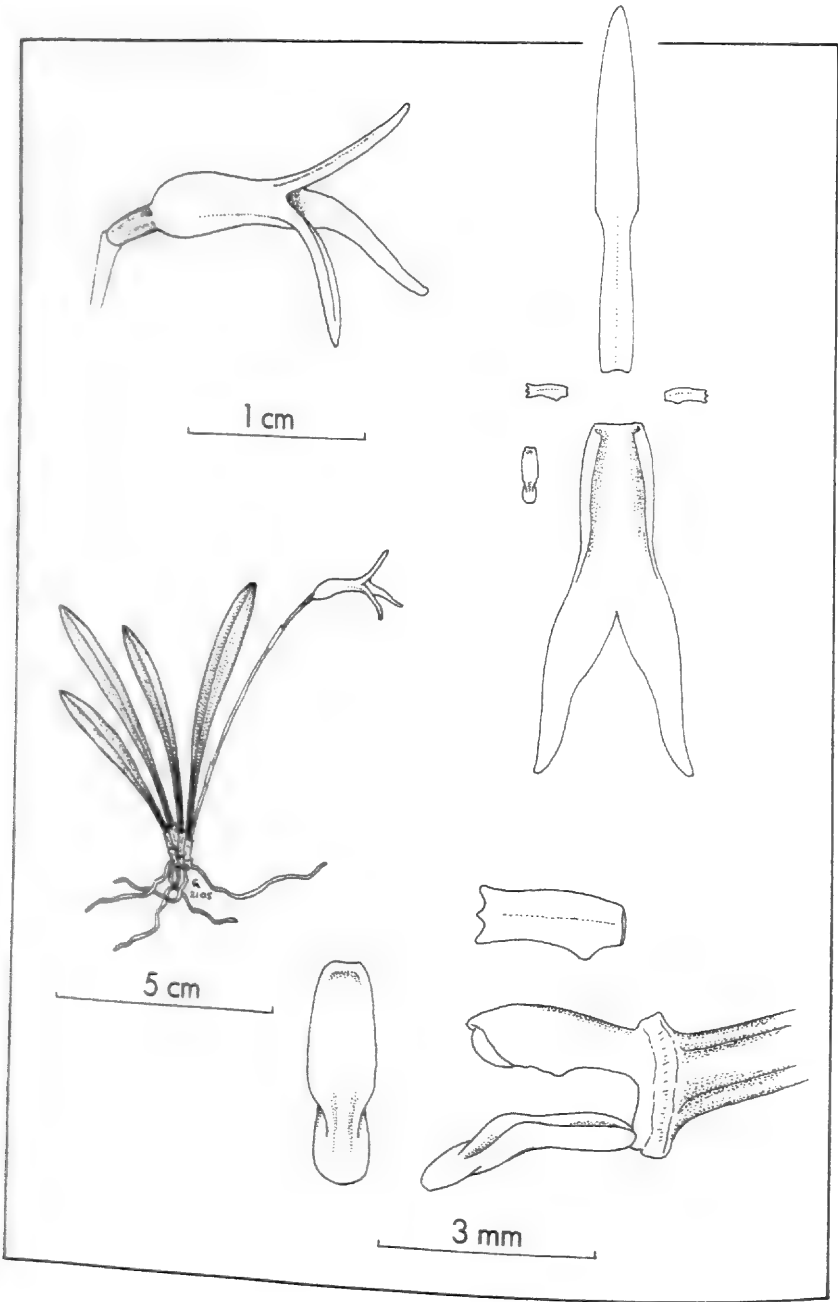


Plate 569. *Masdevallia lansbergii*

Masdevallia venezuelana Sweet, Bot. Mus. Leaf. 26: 47, 1978.

Ety: Named for Venezuela, the country of origin.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect to suberect, 3-8 mm long, enclosed by 2-3 thin, close, tubular sheaths. **Leaf** erect to suberect, coriaceous, 2.5-6 cm long including an indistinct petiole ca. 1 cm long, the blade narrowly obovate, subacute, 6-8 mm wide, gradually narrowed below into the base. **Inflorescence** a solitary flower, borne by a slender, erect to suberect peduncle 3-10 cm long, with a bract above the base, from low on the ramicaul; floral bract tubular, 4-5 mm long; pedicel 5-7 mm long; ovary 3 mm long; **sepals** white, glabrous, connate 10 mm to about the middle into a narrow, cylindrical tube, dilated dorsally below the middle, constricted at the orifice near the middle where the free portions diverge, the dorsal sepal narrowly linear, concave, the blade 10 mm long, 2 mm wide expanded, connate to the lateral sepals for 10 mm, the free portion suffused with orange, thick, narrowly elliptical, acute, 10-11 mm long, 2 mm wide, the lateral sepals connate 8 mm into a narrowly ovoid synsepal, 10 mm long, 5 mm wide expanded, the free portions suffused with orange, thick, narrowly elliptical, acute, 10-11 mm long, 2.3 mm wide; **petals** translucent white, oblong, 3 mm long, 1 mm wide, dilated at the broadly obtuse apex, the labellar margin with a low, longitudinal callus obtusely angled in the lower third; **lip** yellow, oblong, 3.75 mm long, 1.25 mm wide, with obtuse marginal folds near the middle, the apex rounded, microscopically erose, the disc sulcate below the middle, the base shallowly concave, truncate with thin, elevated margins, hinged on the end; **column** greenish white, semiterete, 2.5 mm long, the foot 2 mm long, with a short, incurved extension.

VENEZUELA: **Aragua**: Forests of Rancho Grande, alt. 1300 m, 11 Apr. 1937, *H. Pittier 13966* (Holotype: AMES; Isotype: US); same area, obtained from G.C.K. Dunsterville ca. 1968, cultivated by H. Phillips Jesup in Bristol, CT, 28 Mar. 1982, *C. Luer 7406* (SEL); El Portachuelo between Maracay and Ocumare, 8 May 1925, *H. Pittier 11820* (AMES, US); Rancho Grande, cloud forest at about 5,000 ft. near crestal ridge, Oct. 1959, *G.C.K. Dunsterville 528* (AMES); Parqué Nacional Henry Pittier, ridge above Rancho Grande toward Pico Guacamayo, alt. 1500-1700 m, 20 Oct. 1961, *J.A. Steyermark 89793* (AMES, VEN). **Sucre**: Peninsula de Paria, east of Cerro Humo, alt. 760-1000 m, 24 Feb. 1980, *J.A. Steyermark, R. Liesner & V. Carreño 121757* (MO, VEN).



This little species is apparently endemic to the coastal mountains west of Caracas where it was first collected by Henri Pittier in 1925. Among several clones in cultivation today, the large one described and illustrated here is particularly fine. It has been given several awards.

Slender peduncles bear fragrant, tubular flowers about as high as or higher than the leaves. The narrow, orange, free portions of the sepals diverge from the orifice of the white, constricted tube which is as long as the free portions. The petals are spatulate with the dilated apex obtuse, and with a low keel on the labellar half below the middle. The lip is oblong with a pair of obtuse calli at the middle, with the apex rounded, and with the oblong basal half shallowly concave and sulcate. Erroneously identified as *Physosiphon lansbergii* (Rchb.f.) L.O. Williams in *Venezuelan Orchids Illustrated*, it was correctly identified in the field guide.

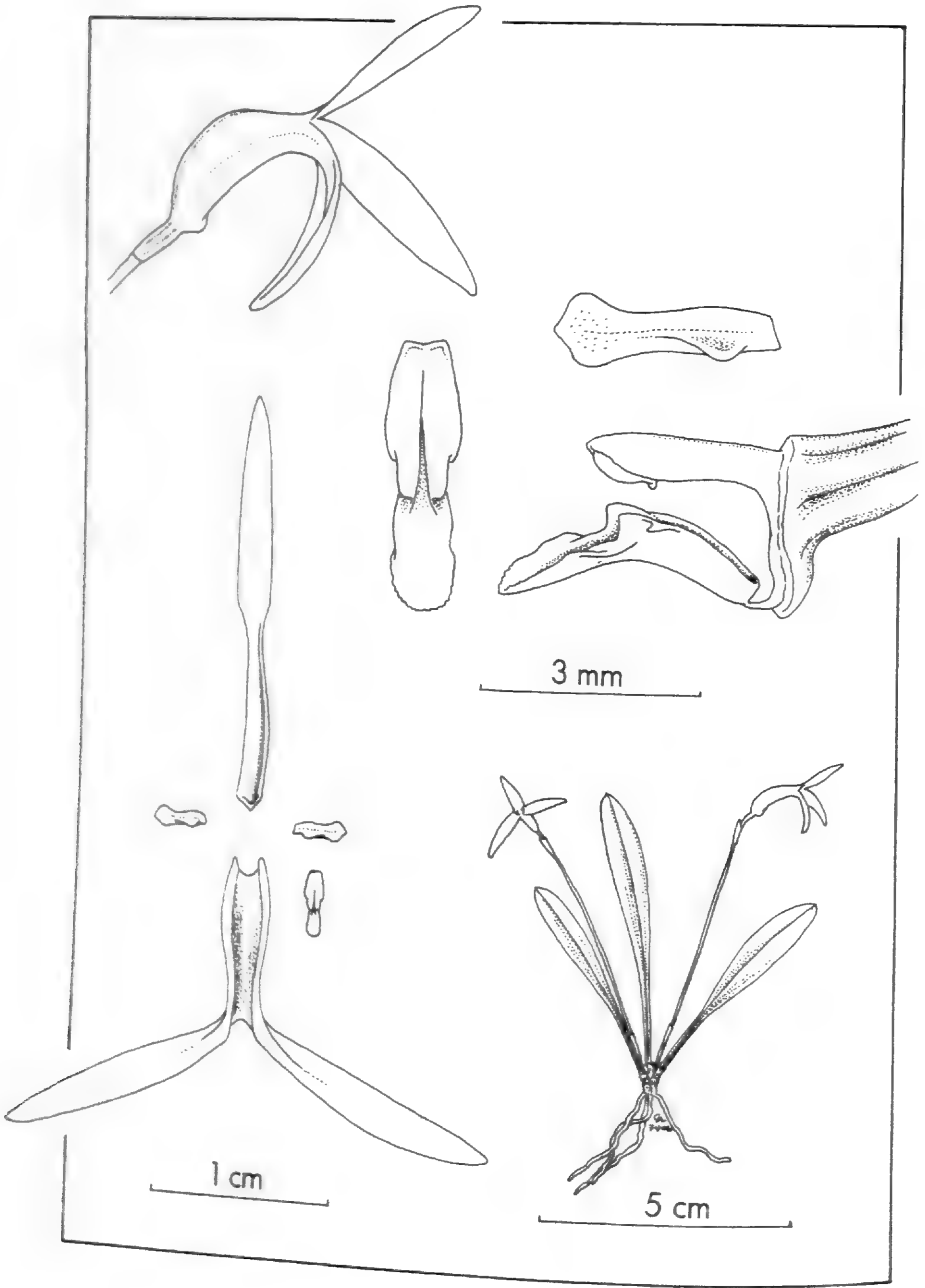


Plate 570. *Masdevallia venezuelana*

MASDEVALLIA SUBGENUS AMANDA

Masdevallia subgenus **Amanda** Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 16: 10, 1986.

Bas.: *Masdevallia* sect. *Amandae* Rchb.f., Gard. Chron. n.s. 2: 290, 1874.

Type: *Masdevallia amanda* Rchb.f. & Warsz., Bonplandia 2: 115, 1854.

Ety.: From the Latin *amandus*, "lovely," referring to the pleasing flowers.

Syn.: *Masdevallia* subsect. *Amandae* (Rchb.f.) Veitch, Man. Orchid. Pl. 5: 18, 1889.

Type: *Masdevallia amanda* Rchb.f. & Warsz.

Syn.: *Masdevallia* sect. *Polystictae* Kraenzl., Repert. Spec. Nov. Regni Veg. Beih. 34: 32, 1925.

Type: *Masdevallia polysticta* Rchb.f.

Ety.: From the Greek *polystictos*, "with many dots," referring to the spotted flowers.

This well-defined subgenus contains 28 species, the majority of which are found in the Andes of Ecuador with a few species in adjacent southern Colombia and a few species in adjacent northern Peru. One species, *M. rafaelliana*, is endemic in Costa Rica. Many species are confined to a limited region, but others are more widely distributed. *Masdevallia amanda* is relatively frequent in Ecuador, all three cordilleras of Colombia, and westernmost Venezuela. One species, *M. densiflora*, has not been recollected since its original discovery.

Some locally endemic, morphologically stable species are easily recognized (e.g. *M. chaetostoma*, *M. corazonica*, *M. dalstroemii*, *M. hydrae*, *M. porphyrea*, *M. rafaelliana*, *M. staaliana*, *M. tentaculata* and *M. zygia*), but distinguishing other species is sometimes difficult, the most difficult being the variable *M. polysticta* and its close allies (*M. caloptera*, *M. lehmannii* and *M. pulcherrima*) sometimes with blurred boundaries.

Masdevallia alvaroi is intermediate between *M. amanda* and *M. picturata* of subgenus *Fissia*. A hybrid origin was suspected when it was first discovered. Both putative parents have subsequently been found near or in the original locality.

The flowers of some species of the single-flowered subgenus *Fissia* (e.g. *M. dynastes*) are superficially similar to this subgenus, suggesting a not-too-distant relationship. Subgenus *Meleagris* with successively flowered racemes and superficially similar flowers with free sepals is also suggestive of a not-too-distant relationship.

Vegetatively, the species of this subgenus are caespitose or shortly ascending, and they vary from small to large in size. The leaves are petiolate. The proportion of the length of the blade to petiole varies within a species, contrary to Kränzlin's assertion that the ratio is a good specific criterion. The racemes, loose or congested, are nearly simultaneously-flowered, and borne by peduncles that are round in cross section; the floral bracts are often more or less inflated; the ovaries are carinate or crested; the sepals are caudate and variously connate into a shallow cup or arcuate-cylindrical tube; the petals are callous on the labellar half, the margins are entire to denticulate, and the shape of the apex, often apiculate, can vary within a species; and the lip is more or less divided by marginal folds into a hypochile and a smaller epichile. A delicate strap connects the base of the lip to the tip of the extension of the column-foot, or just under the tip of the extension as in subgenus *Meleagris*.

BINOMIALS PUBLISHED IN *MASDEVALLIA* ATTRIBUTABLE TO
SUBGENUS *AMANDA*

<i>Masdevallia abbreviata</i> Rchb.f.	Plates 571, 572.
<i>Masdevallia Xalvaroi</i> Luer & Escobar.....	Plate 573.
<i>Masdevallia amanda</i> Rchb.f. & Warsz.	Plate 574.
<i>Masdevallia anceps</i> Luer & Hirtz	Plate 575.
<i>Masdevallia aureodactyla</i> Luer = M. pachyura	
<i>Masdevallia biflora</i> Regel, non Morren = M. caloptera	
<i>Masdevallia bulbophyllopsis</i> Kraenzl.	Plates 576, 577.
<i>Masdevallia caloptera</i> Rchb.f.	Plate 578.
<i>Masdevallia calopterocarpa</i> Rchb.f. = M. amanda	
<i>Masdevallia chaetostoma</i> Luer.....	Plate 579.
<i>Masdevallia corazonica</i> Schltr.	Plates 580, 581.
<i>Masdevallia dalstroemii</i> Luer.....	Plate 582.
<i>Masdevallia delphina</i> Luer	Plate 583.
<i>Masdevallia densiflora</i> Schltr., no illustration available.....	page 1124
<i>Masdevallia dimorphotricha</i> Luer & Hirtz.....	Plate 584.
<i>Masdevallia graminea</i> Luer.....	Plate 585.
<i>Masdevallia gustavii</i> Rchb.f. = M. amanda	
<i>Masdevallia huebschiana</i> Kraenzl. = M. polysticta	
<i>Masdevallia hydrae</i> Luer.....	Plate 586.
<i>Masdevallia invenusta</i> Luer = M. bulbophyllopsis	
<i>Masdevallia jubar</i> Luer = M. tridens	
<i>Masdevallia lehmannii</i> Rchb.f.	Plates 587, 588.
<i>Masdevallia leptoura</i> Luer.....	Plate 589.
<i>Masdevallia melanopus</i> Rchb.f.	Plate 590.
<i>Masdevallia microsiphon</i> Luer.....	Plate 591.
<i>Masdevallia oligantha</i> Schltr. = M. amanda	
<i>Masdevallia ova-avis</i> Luer.....	Plate 592.
<i>Masdevallia pachyura</i> Rchb.f.	Plate 593.
<i>Masdevallia pachyura</i> subsp. <i>leptoura</i> = M. leptoura	
<i>Masdevallia polysticta</i> Rchb.f.	Plates 594, 595.
<i>Masdevallia polysticta</i> var. <i>crassicaudata</i> Rchb.f. = M. pachyura	
<i>Masdevallia polysticta</i> subsp. <i>spathulifolia</i> (Kraenzl.) Luer = M. polysticta	
<i>Masdevallia porphyrea</i> Luer.....	Plate 596.
<i>Masdevallia pozoi</i> Königler.....	Plate 597.
<i>Masdevallia pulcherrima</i> Luer & Andreetta.....	Plate 598.
<i>Masdevallia rafaiana</i> Luer.....	Plate 599.
<i>Masdevallia remotiflora</i> Kraenzl. = M. amanda	
<i>Masdevallia segrex</i> Luer & Hirtz	Plate 600.
<i>Masdevallia sertula</i> Luer & Andreetta.....	Plate 601.
<i>Masdevallia spathulifolia</i> Kraenzl. = M. polysticta	
<i>Masdevallia sphenopetala</i> Kraenzl. = M. corazonica	
<i>Masdevallia staaliana</i> Luer & Hirtz.....	Plate 602.
<i>Masdevallia tentaculata</i> Luer.....	Plate 603.
<i>Masdevallia tridens</i> Rchb.f.	Plate 604.
<i>Masdevallia vittatula</i> Luer & Escobar.....	Plate 605.
<i>Masdevallia xanthodactyla</i> Rchb.f.	Plates 606., 607.
<i>Masdevallia zygia</i> Luer & Malo.....	Plate 608.

KEY TO THE SPECIES

- 1 Raceme 2-flowered.....2
 1' Raceme usually with 3 or more flowers.....5
- 2 Sepals ca. 20 mm long, exclusive of tails; lip callous without lateral folds.....*M. zygia*
 2' Sepals less than 15 mm long, exclusive of tails; lip variable.....3
- 3 Sepaline tails much longer than the blades.....*M. alvaroi*
 3' Sepaline tails equal to or shorter than the blades.....4
- 4 Sepals ca. 10 mm long; lip divided by marginal folds.....*M. amanda*
 4' Sepals ca. 6 mm long; lip with hypochile tall-bilamellate.....*M. anceps*
- 5 Flower more or less broadly or dorsally compressed; petals retuse; lip with tall margins below the middle.....*M. porphyrea*
 5' Not as above.....6
- 6 Dorsal sepal connate below the middle to the lateral sepals into a sepaline cup.....7
 6' Dorsal sepal connate above the middle to the lateral sepals into a sepaline tube..24
- 7 Sepaline tails much shorter than the blades; petals not serrate.....*M. rafaaliana*
 7' Sepaline tails nearly as long as or much longer than the blades; petals usually serrate8
- 8 Raceme lax; sepaline tails shorter to slightly longer than the blade.....9
 8' Raceme congested or lax; sepaline tails distinctly longer than the blade.....15
- 9 Sepals white, each with 2 purple stripes.....*M. caloptera*
 9' Sepals not with 2 purple stripes.....10
- 10 Sepals white with large, irregular, purple spots.....*M. pulcherrima*
 10' Sepals not with large, irregular, purple spots.....11
- 11 Sepaline tails thick, more or less clavate.....*M. pachyura*
 11' Sepaline tails slender.....12
- 12 Sepals glabrous with small dots.....13
 12' Sepals densely pubescent14
- 13 Plant small, usually less than 10 cm tall; raceme 2- to 4-flowered.....*M. amanda*
 13' Plant robust, more than 10 cm tall; raceme 4- to 8-flowered.....*M. leptoura*
- 14 Inflorescence shorter than to as long as the leaf; sepals densely short-pubescent.....*M. staaliana*
 14' Inflorescence longer than the leaf; sepals with pubescence with both short and long trichomes.....*M. dimorphotricha*
- 15 Sepals white, each with 2 purple stripes; petals not serrate.....*M. vittatula*
 15' Sepals not with 2 purple stripes; petals serrate.....16
- 16 Raceme very congested, more or less transverse, less than 5 cm long.....17
 16' Raceme lax to congested, erect to arcuate, more than 5 cm long.....20

- 17 Tails of sepals thick, deflexed at the junction with the blade.....*M. sertula*
 17' Tails of sepals slender, not deflexed.....18
- 18 Sepals yellow or yellow-white, sometimes dotted with red or purple....*M. tridens*
 18' Sepals purplish or white, diffusely spotted with purple.....19
- 19 Leaves 3-4.5 cm wide; dorsal sepal ca. 14 mm long.....*M. ova-avis*
 19' Leaves less than 2 cm wide; dorsal sepal ca. 7 mm long.....*M. densiflora*
- 20 Dorsal sepal subacute; sepals shortly pubescent and diffusely and densely dotted with red-purple within*M. dalstroemii*
 20' Dorsal sepal obtuse to rounded; sepals not as above.....21
- 21 Sepals white, or variously spotted with purple, glabrous to sparsely pubescent....22
 21' Sepals yellow, variously spotted with red or brown.....23
- 22 Dorsal sepal rounded.....*M. polysticta*
 22' Dorsal sepal ovate, subacute*M. segrex*
- 23 Sepals 6-8 mm long, shortly pubescent externally; epichile of lip not broader than the hypochile.....*M. lehmannii*
 23' Sepals 11-15 mm long, glabrous; epichile of lip broader than hypochile.....*M. pozoi*
- 24 Sepaline tails very thick, less than half as long as the blade.....25
 24' Sepaline tails at least half as long as the blade or longer.....26
- 25 Mature leaves less than 4 cm tall; petals minute, oblong, entire....*M. microsiphon*
 25' Mature leaves 5-9 cm tall27
- 26 Sepaline tube inflated above and below a central constriction; lip with the epichile wider than the hypochile*M. delphina*
 26' Sepaline tube not inflated; epichile narrower than the hypochile.....
*M. bulbophyllopsis*
- 27 Sepaline tails about as long as the blades.....28
 27' Sepaline tails longer than the blades33
- 28 Raceme congested29
 28' Raceme lax30
- 29 Inflorescence less than 8 cm tall; petals entire.....*M. corazonica*
 29' Inflorescence more than 15 cm tall; petals serrate.....*M. graminea*
- 30 Sepaline tube constricted at the orifice, dilated below; lip with the epichile wider than the hypochile*M. hydrae*
 30' Sepaline tube not constricted; lip with the epichile not wider than the hypochile..31
- 31 Sepaline tails slender, longer than the blades.....*M. abbreviata*
 31' Sepaline tails thick, shorter than the blades.....32
- 32 Pedicels short, about equal to the floral bract.....*M. melanopus*
 32' Pedicels longer, exceeding the floral bract.....*M. xanthodactyla*
- 33 Sepaline tube cylindrical, arcuate, long-pubescent within.....*M. chaetostoma*
 33' Sepaline tube subglobose, not long-pubescent within.....*M. tentaculata*

Masdevallia abbreviata Rchb.f., Gard. Chron. n.s. 10: 106, 1878.

Ety.: From the Latin *abbreviatus*, "shortened," probably referring to the smaller flowers.

Plant small to medium in size, epiphytic, shortly ascending to caespitose; roots slender. Ramicauls slender, erect, 1-3 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, 3-11 cm long including the indistinct petiole 1-3.5 cm long, the blade narrowly elliptical-oblong, subacute, 0.7-2 cm wide, gradually narrowed below into the slender petiole. **Inflorescence** 12-25 cm long, including a simultaneously and distantly several-flowered, secund raceme up to 10 cm long, the peduncle slender, with 2 distant bracts below the middle, from low on the ramicaul; floral bracts thin, 4-6 mm long, slightly inflated; pedicels 3-4 mm long; ovary undulate-ribbed, 2 mm long; **sepals** white, with or without small purple spots, glabrous, the margins microscopically serrate, the dorsal sepal obovate, concave, 7-10 mm long, 5.5-7 mm wide expanded, connate to the lateral sepals for 4.5-6 mm to form an arcuate, sepaline tube, the free portion rounded, contracted into a slender, yellow or greenish tail 9-13 mm long, the lateral sepals ovate-oblong, 6.5-9 mm long, 2.75-4 mm wide, connate 2.5-4 mm, constricted above the dilated base forming a mentum with the column-foot, the apices acute, contracted into tails similar to that of the dorsal sepal; **petals** white, thin, oblong-obovate, 3-3.75 mm long, 1-1.9 mm wide, the apex truncate, more or less tridentate, microscopically denticulate, the labellar half with a low, narrow, longitudinal callus; **lip** light yellow, oblong-subpandurate, 4-5 mm long, 1.5-2.5 mm wide expanded, with oblique folds above the middle, the hypochile, broadly elliptical-oblong, canaliculate, the epichile suborbicular, with 3 (sometimes obscure) low, longitudinal calli, the apex rounded, more or less decurved, the base subtruncate, hinged on the end; **column** green, sometimes marked with purple, semiterete, 2-3 mm long, the foot equally long with a short, thick, incurved extension.

PERU: Without collection data, possibly collected by Roehl, imported and cultivated in Zurich, 10 May 1878, by *Herr Orgies 108?* (Holotype: W); cultivated June 1878 by *Day s.n.* (W); cultivated Jan. 1878 and 29 Apr. 1879, by *Wm. Bull 234, 294, 295, 691, 692* (W); cultivated Jan. 1884 by *Sander s.n.* (W).

ECUADOR: **Pichincha**: western slopes, collected by B. Malo, cultivated at Tarqui near Cuenca, 6 Oct. 1979, *C. Luer 4698* (SEL); between Quito and Santo Domingo, alt. ca. 1500 m, collected by A. Andreetta & A. Hirtz, cultivated at Paute, 16 May 1988, *C. Luer 13394* (MO); between Tandapi and Silante, alt. 2400 m, 2 Jan. 1991, *A. Hirtz 5122* (MO). **Bolívar**: west of Guaranda, alt. ca. 2800 m, collected Aug. 1978, cultivated by A. Andreetta, 29 Mar. 1979, *C. Luer 4050* (SEL). **Loja**: above Zaruma and El Cisne, alt. 2000-2300 m, *F.C. Lehmann 7018, 7019* (K); west of Loja, cultivated by B. Malo at Tarqui, 25 May 1988, *C. Luer 13678* (MO). Without locality, cultivated at J&L Orchids, Easton, CT, 9 Nov. 1978, *C. Luer 2134, 2299* (SEL).

This species, found on the western declivities of Ecuador and Peru, was first collected in northern Peru, probably by Benedict Roezl about 1874. The identification of the holotype is not clear, because of haphazard mounting of fragments of specimens and 10 sketches on five herbarium sheets.

This species is distinguished by the loose raceme of several, small, simultaneous, white flowers, variously dotted with purple, and with slender, yellowish tails longer than the blade. The petals are variably oblong or obtuse and apiculate, with the margins more or less minutely dentate at the apex.

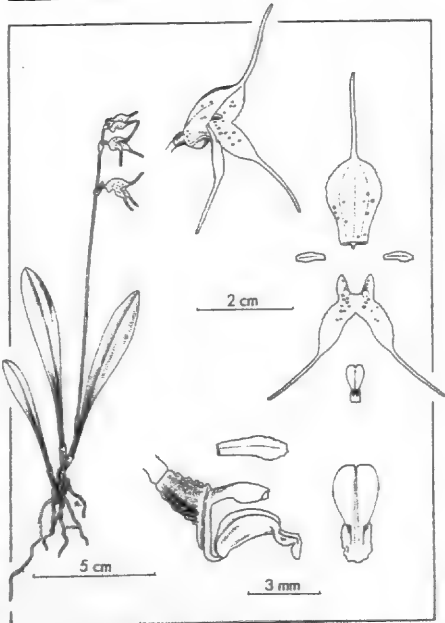
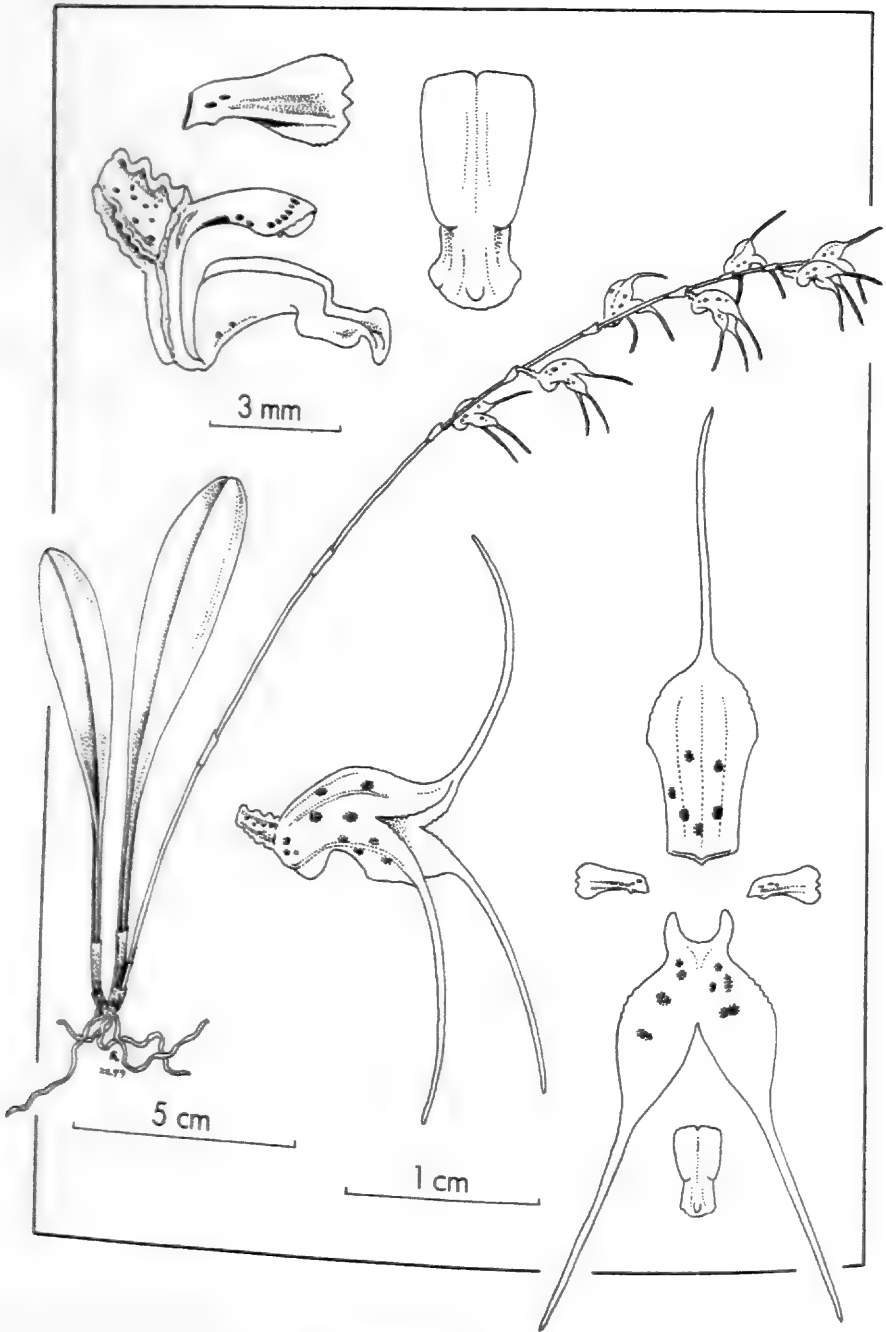


Plate 571. *Masdevallia abbreviata*

Plate 572. *Masdevallia abbreviata*

Masdevallia Xalvaroi Luer & Escobar, *Orquideología* 13: 47, 1978.

Ety.: Named in honor of Dr. Alvaro Arango M. of Medellín, Colombia, who discovered this taxon.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1-1.5 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, coriaceous, narrowly obovate, subacute, 5-8 cm long including an indistinct petiole 0.8-1 cm wide, gradually narrowed below into the subpetiolate base. **Inflorescence** a distantly spaced, simultaneously 2-flowered (occasionally 1-flowered) raceme, with the flowers ca. 2 cm apart, borne by a slender, erect peduncle 7-12 cm long, with a bract below the middle, from low on the ramicaul; floral bract tubular, 5 mm long; pedicel green, spotted with purple, 4 mm long; ovary 2 mm long, with thick, undulate ribs; **sepals** translucent greenish white, spotted with purple, minutely pubescent within, the dorsal sepal minutely ciliate toward the apex, elliptical, concave, 11 mm long, 9 mm wide, connate to the lateral sepals for 2 mm to form a short, sepaline cup, the apex obtuse to rounded, abruptly contracted into a slender, light green tail 20 mm long, the lateral sepals oblong, oblique, 11 mm long, 5 mm wide, connate 1.5 mm to form a short mentum below the column-foot, the apices acute, contracted into slender tails similar to that of the dorsal sepal; **petals** white, dotted with purple along the margins, oblong, 5 mm long, 2 mm wide, the apex tridentate, the labellar margin with a low, longitudinal callus ending in a rounded prominence above the base; **lip** red-brown, oblong-subpandurate, 5.75 mm long, 3 mm wide, with marginal folds above the middle, sulcate centrally, the apex rounded, the base cordate, hinged beneath; **column** green, marked with purple, semiterete, 5 mm long, the foot 3 mm long, with a very short, incurved extension.

COLOMBIA: **Antioquia**: Rionegro, epiphytic in forest between Don Diego and Rionegro, Alto de Barahonda, alt. 2280 m, Feb. 1972, collected by A. Arango, cultivated by M. & O. Robledo at La Caja, 10 Oct. 1977, *C. Luer* 1978 (Holotype: SEL); same collection, cultivated at Colomborquídeas, 17 Apr. 1988, *C. Luer* 13239 (MO).

Masdevallia Xalvaroi, without doubt, is a naturally occurring hybrid between *M. picturata* and *M. amanda*, both of which are known to grow in the same area. The habit and the inflorescence have characters mid-way between the two.

The inflorescence is a distantly two-flowered raceme, the ovaries are undulate-ribbed, the white sepals with purple spots are connate only basally, the tips of the petals are tridentate, and the apex of the lip is obtuse above marginal folds.



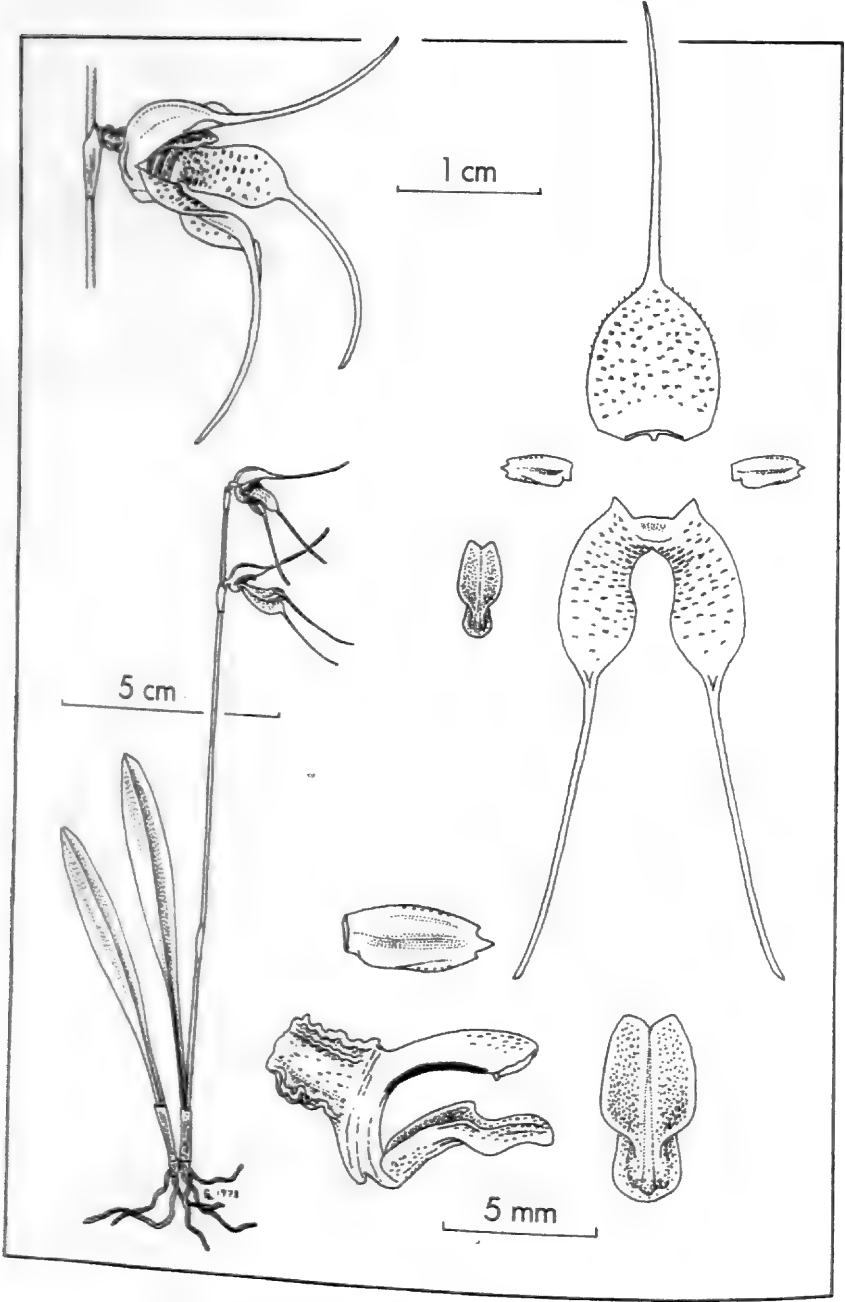


Plate 573. *Masdevallia Xalvaroi*

Masdevallia amanda Rchb.f. & Warsz., *Bonplandia* 2: 115, 1854.

Ety.: From the Latin *amandus*, "lovely," referring to the pretty flowers.

Syn.: *Masdevallia gustavii* Rchb.f., *Gard. Chron.* n.s. 3: 461, 1875.

Ety.: Named in honor of Gustav Wallis, the professional collector who collected this species.

Syn.: *Masdevallia caloptercarpa* Rchb.f., *Flora* 69: 560, 1886.

Ety.: From the Greek *kaloptercarpus*, "pretty, winged fruit," referring to the capsules.

Syn.: *Masdevallia oligantha* Schltr., *Repert. Spec. Nov. Regni Veg. Beih.* 7: 79, 1920.

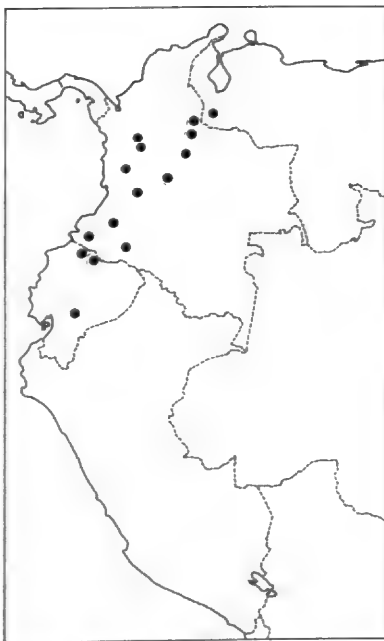
Ety.: From the Greek *oliganthos*, "with few flowers," referring to the few-flowered raceme.

Syn.: *Masdevallia remotiflora* Kraenzl., *Repert. Spec. Nov. Regni Veg.* 17: 415, 1921.

Ety.: From the Latin *remotiflorus*, "with remote flowers," referring to the raceme.

Plant small to medium in size, epiphytic to terrestrial, caespitose; roots coarse. Ramicauls erect, 1-2.5 cm long, enclosed by 2-3 thin tubular sheaths. **Leaf** erect, coriaceous, petiolate, 5-13 cm long including the petiole 2-5 cm long, the blade elliptical, subacute to obtuse, 1-2 cm wide, the base cuneate into the petiole. **Inflorescence** a loosely few-flowered, erect to suberect raceme of 2-4 simultaneous flowers, 8-16 cm long including the peduncle, with 1-2 bracts below the raceme, from low on the ramicaul; floral bract inflated, 5 mm long; pedicel 3-5 mm long; ovary 2 mm long with 3 undulating crests; **sepals** glabrous, yellow to pale yellow-green or whitish, with purple dots or bars usually arranged transversely on the lateral sepals, the dorsal sepal ovate, concave, 10-11 mm long, 11-12 mm wide expanded, connate to the lateral sepals for 4 mm to form a shallow, gaping cup, the rounded apex contracted into a slender, yellow tail 6 mm long, the lateral sepals oblong, 12 mm long, 4 mm wide, connate 1.5 mm, the oblique apices contracted into greenish tails similar to that of the dorsal sepal; **petals** white, often dotted with purple, more or less oblong, 5 mm long, 2.5 mm wide, the truncate apex apiculate, both margins denticulate above the middle, the labellar margin with a longitudinal callus; **lip** brown to orange, diffusely dotted with red-brown, oblong-subpandurate, 6 mm long, 3 mm wide, with obtuse marginal folds above the middle, the epichile oblong, rounded, the hypochile oblong with the base truncate, cleft, hinged below; **column** green with purple margins, semiterete, 5.5 mm long, the foot 4 mm long with a short, incurved extension.

COLOMBIA: without locality, *Warszewicz s.n.* (Holotype: W); without locality, *G. Wallis s.n.* (holotype of *M. gustavii*: W); without locality, *Shuttleworth s.n.* (W); without collection data, holotype of *M. caloptercarpa* unknown. **Norte de Santander**, old province of Ocaña: La Cruz, alt. 6,000-7,000 ft., 1851, *L. Schlim* 503 (BR, G, K, P, W); Alto de Santa Inez, alt. 2150 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia* 10347 (MO). **Santander**: epiphytic in forest west of Velez, alt. 2500 m, 4 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia* 10101 (MO). **Boyacá**: between Arcabuco and Moniquira, alt. 2500 m, 25 Apr. 1982, *C. Luer, J. Luer, R. Escobar & D. Portillo* 7534 (AMES, MO, SEL). **Antioquia**: "Medellín," *G. Wallis* 243 (W, type of *M. remotiflora*); Alto del Poleal above Caramonda, 3 Sept. 1884, *F.C. Lehmann* 4134 (G); El Retiro, alt. 1700-2300 m, 1891, *F.C. Lehmann* 7020 (AMES, K, LE); Parque Ecológico Piedras Blancas, alt. 2350 m, 19 Nov. 1994, *R. Fonnegra, W. Rengifo & A. Acevedo* 5267 (HUA, MO); Alto de Minas, clay banks, between Caldas and Santa Bárbara, alt. 2500 m, 12 Jan. 1956, *W.H. Hatheway & G. Gutierrez* 1621 (AMES); Sonsón, road to La Solidaridad, alt. 3000 m, 8 Apr. 1988, *R. Collejas et al.* 6404 (HUA); Cerro Padre Amaya, 22 May 1988, *J. Zeruchi* 2640 (HUA, MO). **Choco**: between Urrao and Carmen de Atrato, alt. 2680 m, 31 May 1995, *C. Luer et al.* 17686 (MO). **Caqueta**: between San Vicente and Campoalegre, alt. 1500 m, Apr. 1938, *J. Renz* 3596 (BAS). **Tolima**: Río Cabrera, alt. 2800 m, 10 Jan. 1883 *F.C. Lehmann* 2360 (BM, BR, G). **Cauca**: without locality, alt. 2400 m, *M. Madero s.n.* (holotype of *M. oligantha* destroyed at B); above Popayán, alt. 1740 m, 28 Jan. 1884, *F.C. Lehmann* 3490 (BM, BR, G); above Popayán, 1700-2200 m, 1891, *F.C. Lehmann* 7014 (AMES, G, K, LE, W); San



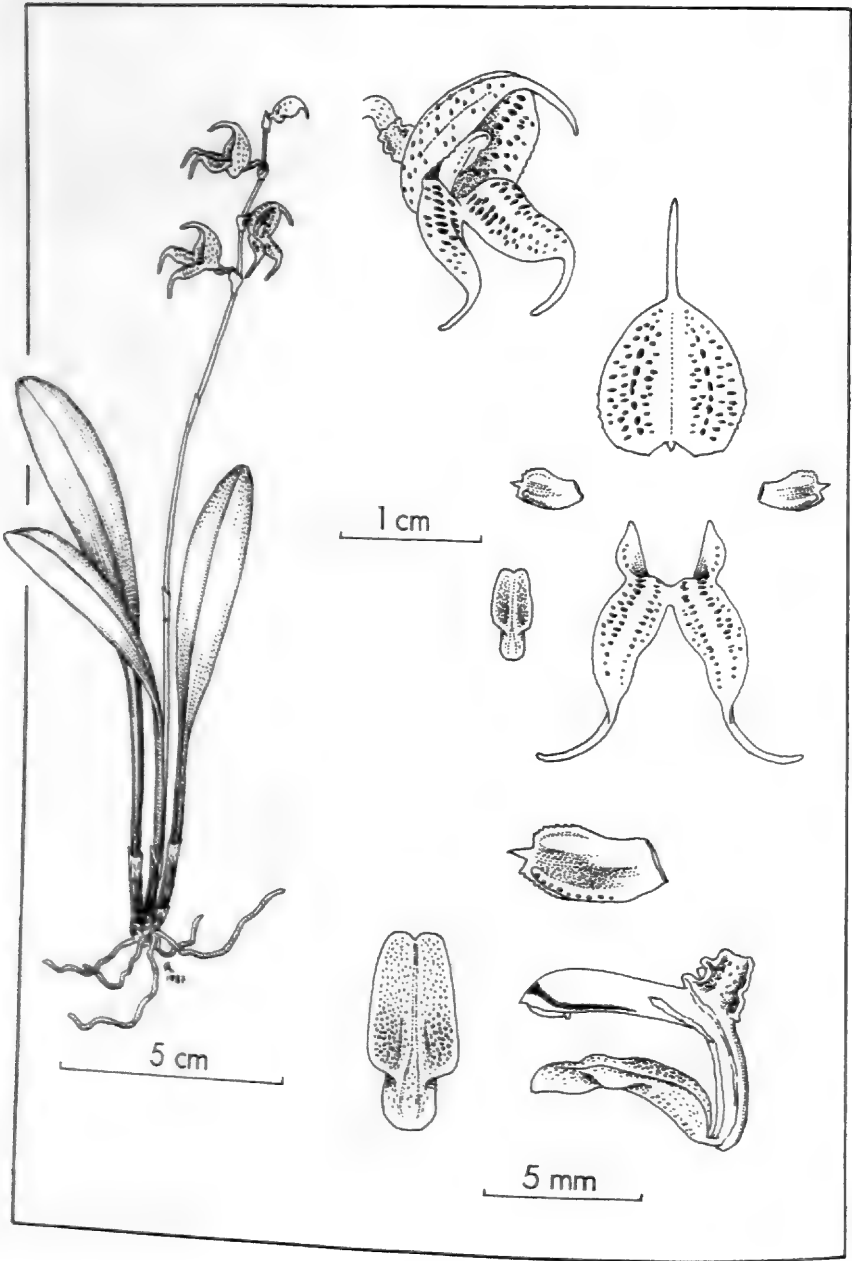


Plate 574. *Masdevallia amanda*

Antonio, "San José," alt. 2400-2700 m, 28 June 1922, *F.W. Pennell 7293, 7589* (AMES, K, US); El Tambo, alt. 2200 m, 27 Jan. 1976, *T.C. Plowman & D. Vaughn 5332* (AMES); Munchique, cultivated at La Ceja by M. & O. Robledo, 11 Oct. 1977, *C. Luer 1987* (SEL). **Cundinamarca**: between Aguadita and San Miguel, alt. 1900 m, 20 June 1941, *J. Renz 3581* (BAS); San Miguel, alt. 2800 m, 9 Feb. 1941, *J. Renz 3575* (BAS); San Miguel near Sibaté, alt. 2000-2900 m, 11 Oct. 1948, *M. Schneider 233* (S). **Nariño**: Túquerres, alt. 1600-2000 m, 1894, *F.C. Lehmann s.n.* (K).

VENEZUELA: **Táchira**: around Las Delicias on way to Regonbalia, alt. 1900 m, 31 May 1951, *J. Renz 7092* (BAS).

ECUADOR: **Carchi**: terrestrial on the road embankment between Maldonado and Tulcán, alt. 2000 m, 21 Feb. 1978, *C. Luer, J. Luer & Hirtz 2668* (SEL). **Sucumbios**: terrestrial on the road embankment southeast of El Carmelo, alt. 2050 m, 17 May 1981, *C. Luer, J. Luer & A. Hirtz 6297* (SEL); epiphytic between El Carmelo and La Bonita, alt. 2200-2350 m, 11 Apr. 1979, *B. Løjnant, U. Molau & M. Madison 12227* (AAU). **Morona-Santiago**: Valle del Paute, alt. 2200 m, collected by A. Andreaetta & M. Portilla, cultivated at Paute, 16 May 1988, *C. Luer 13368* (MO).

This species is frequent and widely distributed from western Venezuela, through all three cordilleras of Colombia, and less frequent as far as southern Ecuador. It often occurs terrestrially on road embankments. In spite of its having been collected on several occasions before Miss Woolward produced her monograph (1892-1896), no plant was in cultivation in England for her to paint its portrait.

Masdevallia amanda is variable in the size and color of the flowers, and in the lengths of the inflorescences, from short to elongate, depending upon the habitat, but the plants are usually small. Most often, the racemes are loosely two- to four-flowered, but sometimes as many as seven or eight flowers are present. Depauperate plants may produce only one flower.

The sepals of the simultaneous, cupped flowers are variously marked with dots and transverse dashes or bars. The tails are slender and about as long as the blades. The petals are serrate and apiculate. The lip is divided by marginal folds into a round epichile and an oblong hypochile. The flowers are very similar to those of the robust *M. leptoura*, which could be conceived as a vigorous, austral variation of *M. amanda*.

Masdevallia densiflora was described from a collection by Madera from Cauca in Colombia. Today, only two species of subgenus *Amanda* are known from Colombia: *M. amanda* and *M. vittatula*. Schlechter's description and drawing approach the former, but the congested, seven- to nine-flowered raceme seems to eliminate the possibility of its being *M. amanda*.

Masdevallia densiflora

One of the reasons that subgenus *Amanda* had been delayed until Part-5 of *Systematics of Masdevallia* was the hope that *M. densiflora* would be rediscovered. It was described by Schlechter in 1920 from a collection by the mysterious Madero, a collector in Cauca in southern Colombia. All Madero's collections were lost in the destruction of the Berlin-Dahlem herbarium in 1944. No duplicate material is known, and no known subsequent collection matches the description. The following description was made from Schlechter's published description and drawing.

Masdevallia densiflora Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 77, 1920.

Ety.: From the Latin *densiflorus*, "densely flowered," referring to the raceme.

Plant small, presumably epiphytic, densely caespitose; roots slender. Ramicauls slender, probably ca. 1 cm long, enclosed by close, tubular sheaths. **Leaf** erect, coriaceous, long-petiolate, the blade oblong-ligulate, 6-6.5 cm long, 1.8 cm wide near the middle, gradually narrowed below into a petiole 4 cm long. **Inflorescence** a congested, subsecund, simultaneously 7- to 9-flowered raceme, with the rachis 3-3.5 cm long, borne by an erect to suberect peduncle ca. 9 cm long; floral bracts broadly ovate, acuminate, erect-spreading, slightly longer than the pedicel, estimated 3 mm long; pedicel and ovary together 5 mm long, ovary with 6 undulating crests, estimated 2 mm long; flowers medium in size, **sepals** densely dotted or spotted with purple, connate 3.5 mm into a tube that is broadly cup-shaped at the base, forming an obtuse mentum, free part of the dorsal sepal semioblong, estimated to be subacute, papillose near the margins within, 7 mm long, 3-veined, with a filiform tail 23 mm long, the lateral sepals 3-veined, oblong, oblique, as long as the dorsal sepal, but distinctly narrower; **petals** obliquely oblong, long-apiculate, slightly narrowed toward the base, 4 mm long, 1-veined, with subcrenulate margins, with a longitudinal carina above the lower margin; **lip** abruptly constricted above the middle by marginal folds, 5 mm long, 3-veined, the veins thickened toward the apex, the hypochile oblong-quadrate, the epichile dilated, obovate, the base subcordate, hinged beneath; **column** suberect, slightly dilated by the stigma, 4 mm long, with an incurved foot 3.5 mm, the clinandrium slightly crenulate.

COLOMBIA: Cauca: alt. 2100 m, *M. Madero s.n.* (Holotype destroyed at B); no isotypes known.

This collection is characterized by a small, slender habit with a raceme exceeding the leaf about half the length of the leaf, which is less than two centimeters wide. The rachis is described as being three and a half centimeters long and crowded with seven to nine diffusely purple-spotted flowers. This immediately suggests Ecuadorian *M. ova-avis*, but plants of the latter are much larger with broad, petiolate leaves, and the flowers are considerably larger. Schlechter's drawing of the floral parts of *M. densiflora* shows the petal with an elongated, acute, triangular apex, which would be an exaggeration of the apiculum seen in either *M. amanda* or *M. ova-avis*. It is possible that *M. densiflora* is a depauperate collection of *M. ova-avis*.

Masdevallia amanda differs from *M. densiflora* in the loose, few-flowered raceme. *Masdevallia vittatula* differs with smaller flowers with two-stripped sepals as in *M. caloptera*, and entire instead of serrate petals.

Masdevallia anceps Luer & Hirtz, *Novon* 1: 165, 1991.

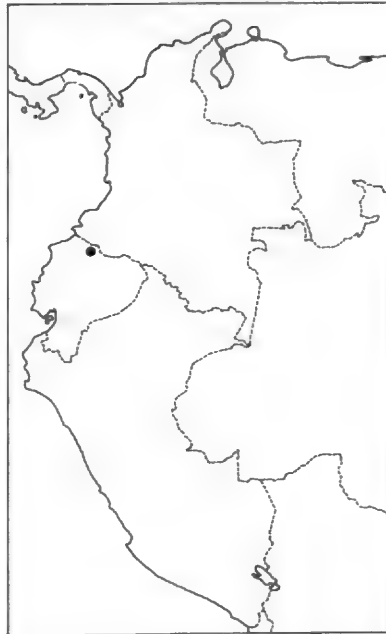
Ety.: From the Latin *anceps*, "two-headed," referring to the two-flowered inflorescence.

Plant very small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-14 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, thinly coriaceous, long-petiolate, 2.5-4 cm long including the 1-2 cm long petiole, the blade narrowly elliptical, subacute, 3-4 mm wide, the base narrowly cuneate into the slender petiole. **Inflorescence** a simultaneously 2-flowered raceme, the flowers 1 cm apart, borne by a slender, erect peduncle 2-2.5 cm long, with a bract above the base, from low on the ramicaul; floral bracts inflated, 2.5-3 mm long; pedicels 1.5-2 mm long; ovary 1.5 mm long, with 6 crests; **sepals** pale yellow with small, red spots, glabrous, the margins minutely erose, the dorsal sepal obovate, concave, 6 mm long, 4 mm wide expanded, connate to the lateral sepals for 2.5 mm to form a sepaline cup, the apex obtuse, contracted into a straight, stout, forward tail 4 mm long, the lateral sepals elliptical, oblique, 5.5 mm long, 1.6 mm wide, connate 2 mm, the bases forming a round mentum below the column-foot, the apices acute, contracted into stout tails 4 mm long; **petals** white, oblong, 2.25 mm long, 1.25 mm wide, the apex tridentate, the margins minutely serrate, with a longitudinal carina within the labellar margin; **lip** white, suffused with purple toward the base, oblong, arcuate, 3 mm long, 1 mm wide unexpanded, the sides rigidly erect, terminating abruptly as a pair of lamellae on the distal third, apex ovate, acute, with undulate margins, the disc shallowly channeled, the base subcordate, hinged beneath; **column** stout, semiterete, 1.5 mm long, with a stout foot 2 mm long.

ECUADOR: **Sucumbíos**: epiphytic in forest above La Bonita, alt. 2000 m, Feb. 1991, A. Hirtz 5148 (Holotype: MO), C. Luer illustr. 15272. Without collection data, F.C. Lehmann 315 (W).

Masdevallia anceps and *M. microsiphon* are the smallest members of the subgenus. *Masdevallia amanda*, *M. zygia*, and this species are the only three members of the subgenus *Amanda* found on the eastern slopes of the Ecuadorian Andes. *Masdevallia anceps* is characterized by the tiny, narrow, long-petiolate leaves less than four millimeters wide; a distantly two-flowered raceme; and blades of the sepals only about six millimeters long with shorter, stout tails.

Superficially similar to a depauperate *M. amanda*, and apparently endemic on the eastern slope of northernmost Ecuador, *M. anceps* is most closely allied to *M. abbreviata* that occurs widely distributed on the western slopes of Ecuador and Peru. It differs from both *M. abbreviata* and *M. amanda* in the very much smaller, weak habit, and twice smaller flowers with short, thicker tails. The sepals of *M. microsiphon* are tailless and deeply connate into a tube.



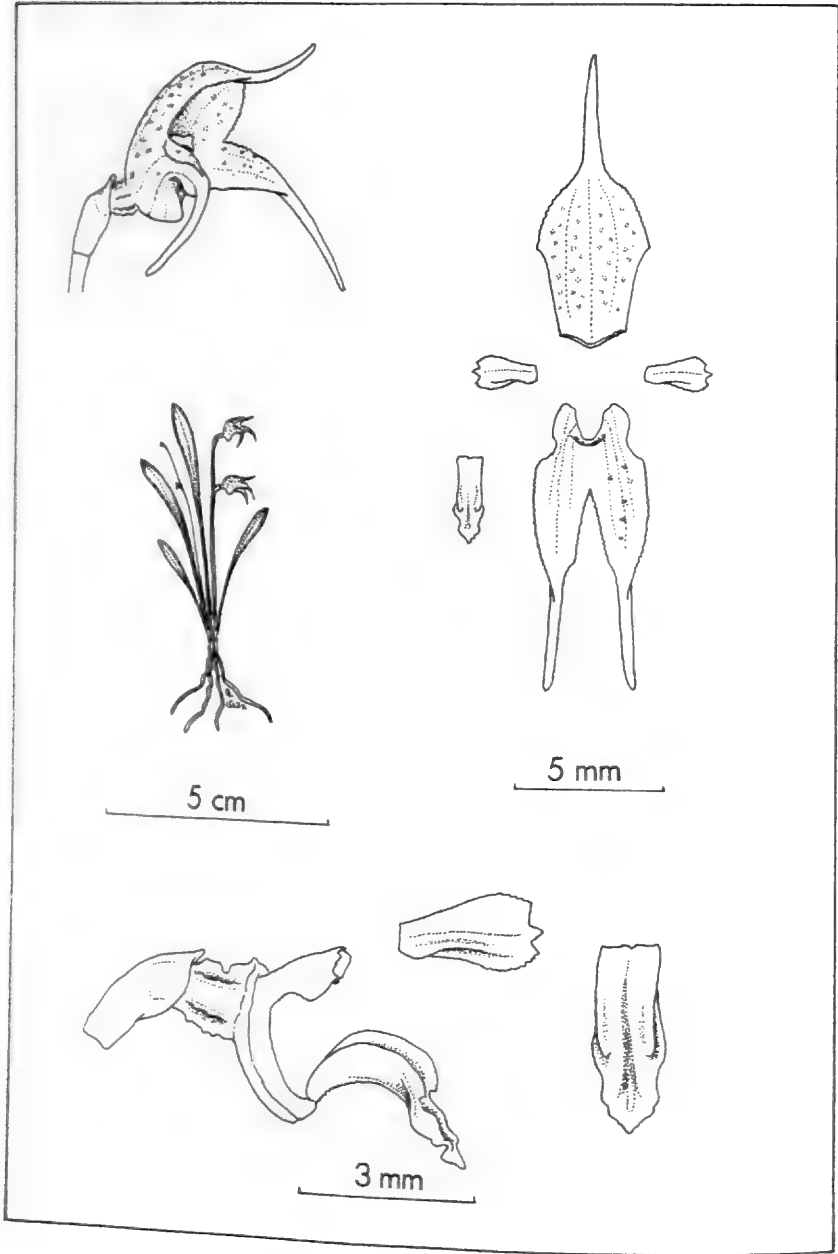


Plate 575. *Masdevallia anceps*

Masdevallia bulbophyllopsi Kraenzl., Repert. Spec. Nov. Regni Veg. 17: 412, 1921.

Ety.: Named for the genus *Bulbophyllum* Thouars in which Kränzlin imagined some similarity to this species.

Syn.: *Masdevallia invenusta* Luer, Phytologia 44: 166, 1979.

Ety.: From the Latin *invenustus*, "not pretty," referring to the drab little flowers.

Plant medium in size, epiphytic to terrestrial, caespitose, the rhizome more or less ascending; roots slender. Ramicauls slender, erect, 1-2 cm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, 6-9 cm long including the petiole 2-3 cm long, the blade narrowly elliptical, subacute, 1-1.5 cm wide, gradually narrowed below into the indistinctly petiolate base. **Inflorescence** an erect, lax, secund raceme of 4-6 simultaneous flowers, 10-21 cm tall including the peduncle, the peduncle slender with 2 distant bracts, from low on the ramicaul; floral bracts thin, tubular, 4-5 mm long; pedicel 3-5 mm long; **sepals** greenish white to yellowish white, often dotted with red, glabrous, the dorsal sepal oblong, concave, 6-8 mm long, 2.5-4 mm wide, connate to the lateral sepals for 4-6 mm to form a curved, cylindrical, sepaline tube, the free portion 3.5-5 mm long, yellow, thickened, more or less terete, obtuse, the lateral sepals oblong, 8-11 mm long including the free, thickened, obtuse, yellow, apical portions, connate 3-4 mm into a concave lamina 3-5 mm wide expanded; **petals** white, translucent, oblong to cuneate, 2.5-3.5 mm long, 1-1.5 mm wide, the apex tridentate or truncate with an apiculum, the margins more or less serrate, with a longitudinal callus above the labellar margin; **lip** purple to yellow dotted with red, oblong, 3-3.5 mm long, 1 mm wide, the sides with low, longitudinal calli with ill-defined marginal folds above the middle, the epichile obtuse, the hypochile oblong, subcordate at the base, hinged on the end; **column** light green, more or less marked with purple, semiterete, 2.5-3 mm long, the foot short, with a short, thick, incurved extension.

ECUADOR: **Loja**: near El Cisne, alt. 2600-2700 m, probably *F.C. Lehmann s.n.* (Holotype: W); Loja, alt. 2300-2500 m, Sept. 1876, *F.C. Lehmann 7012* (AMES, LE); Cisne, alt. 2300-2500 m, *E. André 4344* (K); same area, alt. ca. 2000 m, collected by B. Malo, cultivated at Tarqui near Cuenca, 16 July 1977, *C. Luer 1720, 1750* (SEL); same area, Las Chinchas, alt. 2000-2200 m, collected by W. Teague, cultivated in San Francisco, CA., 26 Dec. 1982, *R. Escobar 2524* (SEL); same area, Las Chinchas, alt. 1800 m, collected by A. Andreetta & M. Portilla, cultivated at Paute, 16 May 1988, *C. Luer 13392* (MO).



This species is confined to the damp, forested ravines of semi-arid, southwestern Ecuador. It is characterized by a loose raceme of several small, white, tubular flowers with short, thick, yellowish "tails." Plants with longer, slenderer apices of the sepals seem to grade into *M. melanopus* and *M. abbreviata*, and plants with smaller flowers and shorter tails seem to grade into *M. delphina*, all of which are sympatric in southwestern Ecuador.

The petals of *M. bulbophyllopsi* are usually tridentate, but merely acute in the plant described as *M. invenusta*, but otherwise the two concepts are too similar to separate. Variable petals are commonly seen in related species. The lip is shallowly channeled between a pair of longitudinal calli that form indistinct, marginal folds.

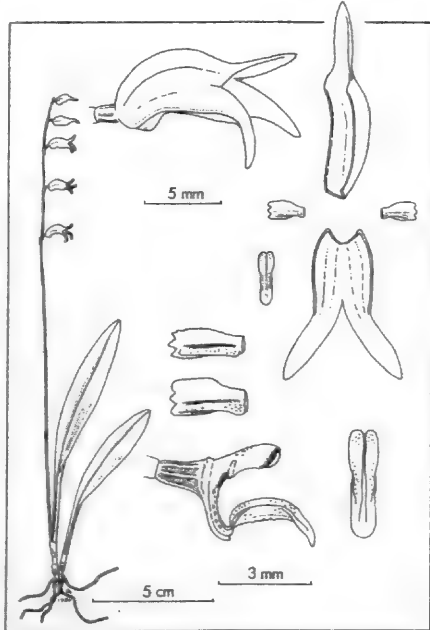


Plate 576. *Masdevallia bulbophyllopsi*

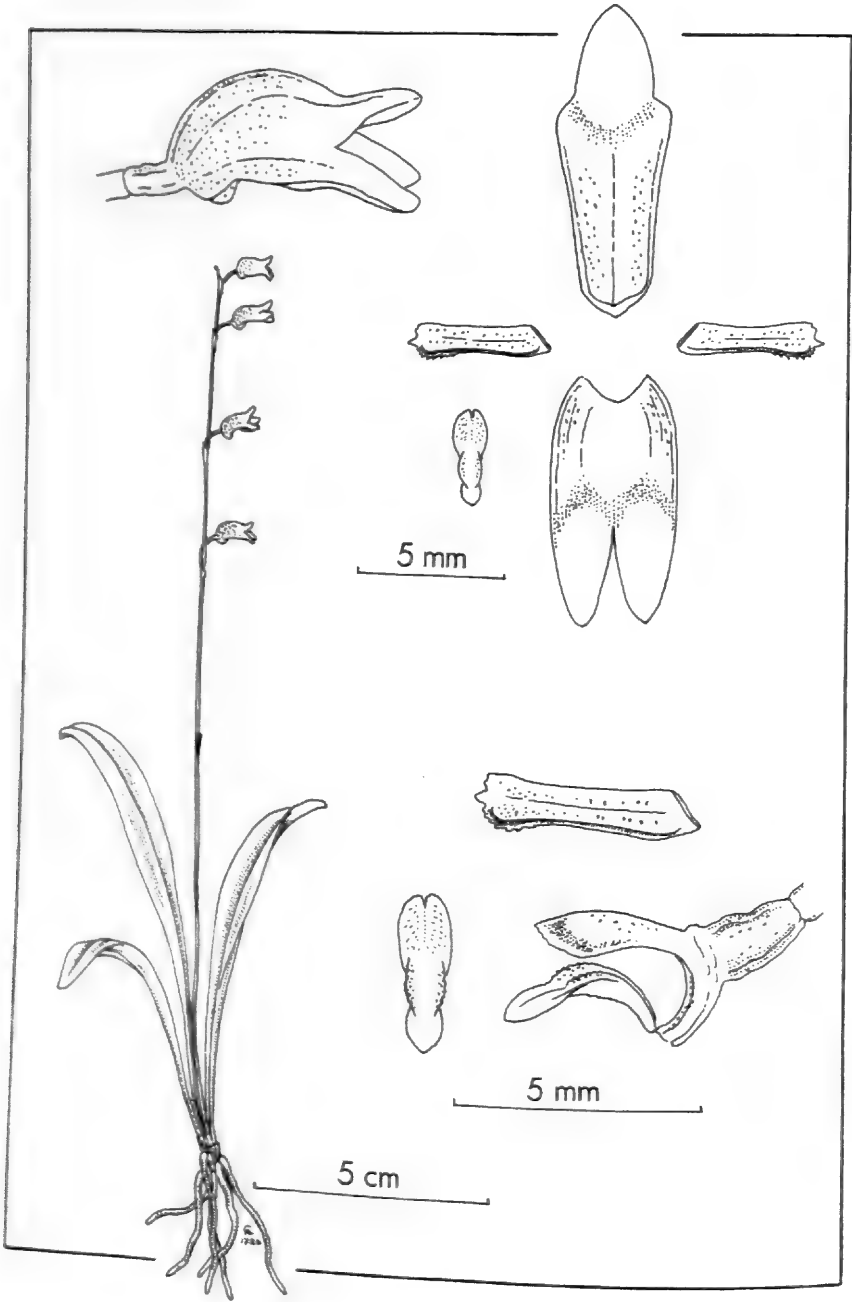


Plate 577. *Masdevallia bulbophyllopsis*

Masdevallia caloptera Rchb.f., Gard. Chron. n.s. 1: 338; et 2: 322, 1874.

Ety.: From the Greek *kalopteron*, "a beautiful wing," referring to the prettily colored sepals.

Syn.: *Masdevallia biflora* Regel, Trudy Imp. S.-Peterburgsk. Bot. Sada 11: 306, 1890; et Gartenflora 40: 90, t. 1341, fig. 2, 1981, non Morren 1873.

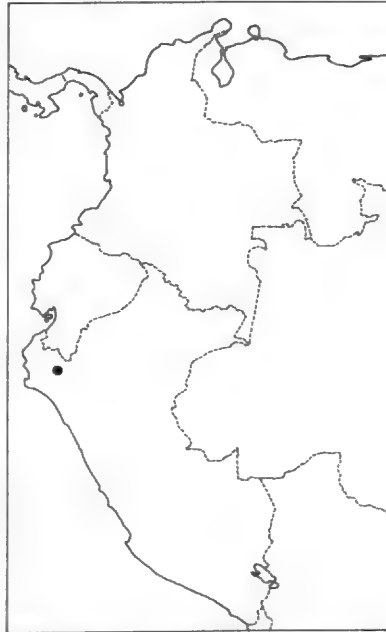
Ety.: From the Latin *biflorus*, "two-flowered," referring to the two flowered raceme

Plant medium in size, epiphytic, caespitose, the rhizome ascending; roots slender. Ramicauls erect, slender, 1.5-3 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, coriaceous, 5-11 cm long including the petiole 1-4 cm long, the blade narrowly obovate, obtuse, 1.2-1.8 cm wide, gradually narrowed below into the petiolate base. **Inflorescence** an erect, lax, simultaneously several-flowered raceme of up to 6 flowers, 13-18 cm tall including the slender peduncle 8-10 cm long, with a bract near the middle and another near the base, from low on the ramicaul; floral bract thin, inflated, enclosing the pedicel and ovary, ovate, 5-7 mm long, 4-5 mm wide expanded; pedicel 2-4 mm long; ovary spotted with purple, undulate-winged, 2-3 mm long; **sepals** white, each with 2 prominent, purple veins, glabrous, the free margins minutely erose, the dorsal sepal suborbicular, concave, 9-10 mm long, 8 mm wide expanded, connate to the lateral sepals for 4 mm to form a subglobose sepaline cup, the rounded free portion abruptly contracted into a slender, yellow tail 7-9 mm long, the lateral sepals elliptical, 7-8 mm long, 3.5 mm wide, concave basally and connate 1-2 mm, the apices subacute, contracted into tails 6-8 mm long, similar to that of the dorsal sepal; **petals** translucent white, marked with purple, elliptical-obovate to oblong, 3 mm long, 1.3 mm wide, the truncate apex more or less tridentate with a prominent, acute apiculum, the margins serrate, with a longitudinal callus along the lower margin; **lip** yellow to orange, marked with purple, oblong-pandurate, 4.25 mm long, 2 mm wide, divided above the middle by marginal folds, the epichile rounded, convex, the hypochile oblong, with a cordate base, hinged beneath; **column** greenish white, marked with purple, semiterete, 4 mm long, the foot stout, 2 mm long, with a short, thick, in-curved extension.

PERU: "northern Peru," without more specific locality, *B. Roezli* s.n. (Lectotype here designated: W: clonotype via Ortgies: K). **Piura**: epiphytic in wooded ravines, west of Huancabamba, alt. 2750 m, Aug. 1980, *W. Königler, H. Königler, C. Luer, J. Luer & M. Arias K-47a* (K, M, SEL, USM, W, Herb. H. Königler), cultivated by Königler in Munich, 5 Sept. 1981, *C. Luer 6456* (SEL); above Canchaque, alt. 3200 m, 21 Feb. 1988, *D. Bennett & A. Bennett 4257* (MO). Without locality, obtained from R. Stumpf, cultivated by M. & O. Robledo at La Ceja, 9 Nov. 1977, *C. Luer 2133* (SEL). Without collection data, flowered in cultivation at St. Petersburg, *Regel* s.n. (holotype of *M. biflora*: LE).

This species, long familiar to hobbyists, is apparently confined to the mountains of northern Peru where it was first collected by Roezli. Only one poor flower is present on the type-sheet at W, but a reasonably recognizable colored illustration by Reichenbach is present. The species is not found in southwestern Ecuador where so many related species of the subgenus intermix. A similar species with white, purple-striped flowers, *M. vittatula*, is found in Colombia and Ecuador.

Vegetatively, *M. caloptera* is not distinctive. The lax, several-flowered raceme surpasses the leaves. Except for being minutely ciliate-erose, the sepals are glabrous and snow white with a pair of purple stripes on each. The deeply concave dorsal sepal is proportionately much larger than the lateral sepals. The tails are yellow and about as long as the blade. The petals are elliptical-obovate with the margins of both sides serrate, and with the tip tridentate. The divided lip is basically similar to that of most other species of the subgenus.



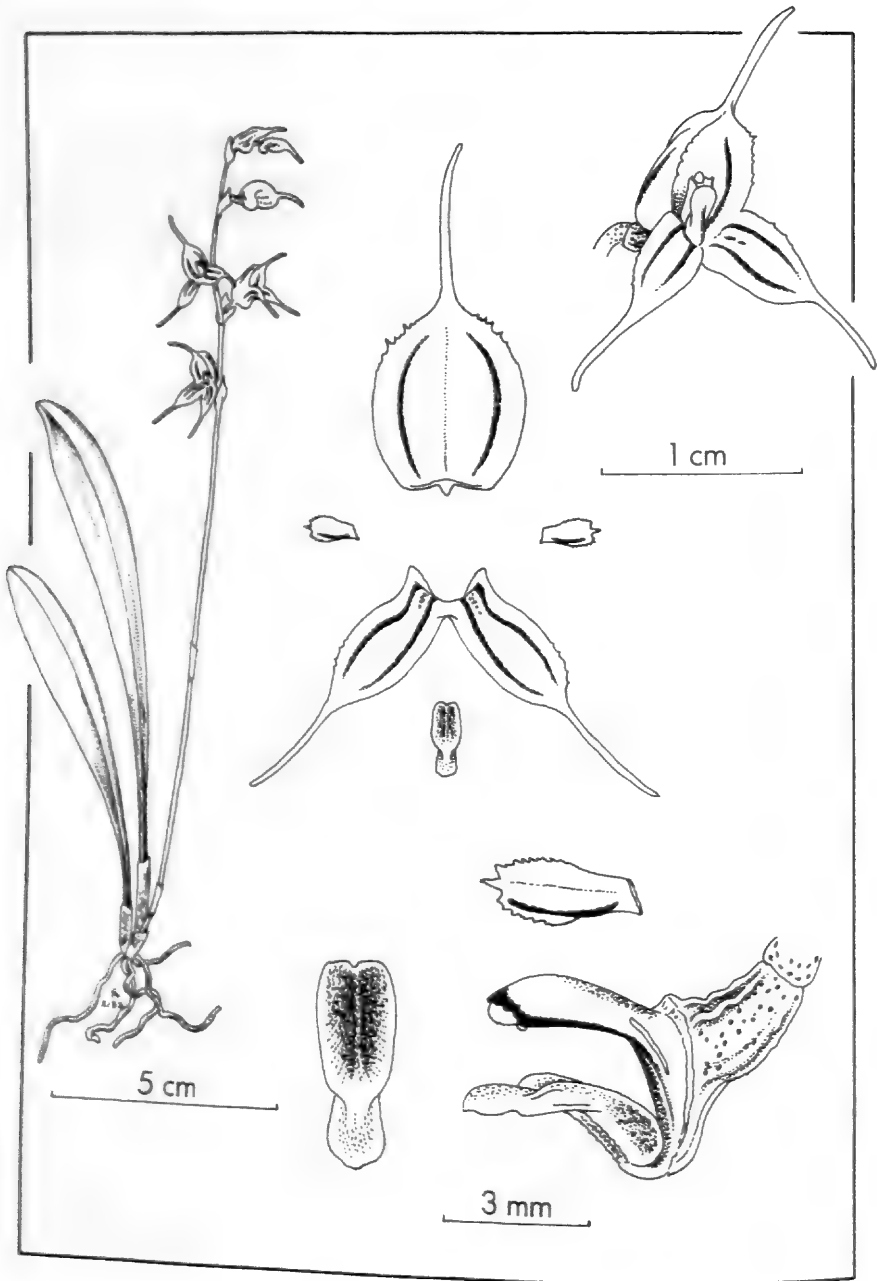


Plate 578. *Masdevallia caloptera*

Masdevallia chaetostoma Luer, *Phytologia* 39: 192, 1978.

Ety.: From the Greek *chaete*, "long hair," and *stoma*, "a mouth or opening," in reference to the long hairs within the opening of the sepaline tube.

Plant small, epiphytic to terrestrial, caespitose; roots slender. Ramicauls slender, 6-10 mm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, narrowly obovate, obtuse to subacute, 2.5-4 cm long including an ill-defined petiole 1-1.5 cm long, 0.7-1.1 cm wide, narrowly cuneate below into the channeled petiole. **Inflorescence** an erect, loosely few-flowered, subsecund raceme of 4-7 simultaneous flowers, 9-10 cm tall including the slender peduncle, from low on the ramicaul; floral bract loose, oblique, 3 mm long; pedicel 1 mm long; ovary 1 mm long, with undulate wings; **sepals** white, villous within above the middle, the dorsal sepal oblong, concave, 7 mm long, 3 mm wide, connate to the lateral sepals for 5 mm to form a curved, cylindrical tube, the free portion broadly triangular, the obtuse apex contracted into a recurved, filiform, greenish to orange tail 10-12 mm long, the lateral sepals obovate, oblique, 6 mm long, connate 3.5 mm, 4 mm wide together expanded, forming a prominent mentum at the base with the column-foot, the acute apices narrowed into tails similar to that of the dorsal sepal; **petals** translucent white, narrowly oblong, 2 mm long, 0.3 mm wide, irregularly denticulate at the truncate apex, slightly dilated along the labellar margin near the base; **lip** red-purple, elliptical, 2.75 mm long, 1.5 mm wide, the broadly rounded sides suberect, the apex broadly rounded, minutely irregular, recurved, the base rounded, retuse, hinged beneath, the disc with a pair of transverse, rounded lamellae above the middle; **column** greenish white, semiterete, 2 mm long, with a curved foot 1 mm long.

ECUADOR: **Pichincha**: terrestrial on the road embankment between Quito and Chiriboga, alt. 2500 m, December 1973, collected by B. Malo, cultivated at Tarqui, 15 July 1977, *C. Luer 1709* (Holotype: SEL); epiphytic in cloud forest above Tandapi, alt. 2500 m, 2 Feb. 1978, *C. Luer, J. Luer & A. Hirtz 2441* (SEL); above Tandapi, alt. 2400 m, Dec. 1984, *A. Hirtz 2175* (MO); above Tandapi, alt. 2000 m, 1991, *A. Hirtz 5123* (MO); Río Silante, western slope of Corazón, alt. 8,500 ft., Aug. 1877, *F.C. Lehmann 33* (W); same locality, alt. 2400 m, 14 Jan. 1884, *F.C. Lehmann 311* (K).

This little species is locally abundant in a small region of cloud forest on the western slopes of the province of Pichincha, where the first known collection was made by Lehmann in 1884. A painting by Lehmann (346) erroneously labeled *M. anachaeta*, but probably of this species, is deposited at Kew.

The tufts of tiny leaves often produce numerous racemes held well above the blades. The little, white, arcuate-tubular flowers, long-pubescent within, produce long, straight, slender tails. The lateral folds of the lip are modified into a pair of transverse flaplike lamellae.



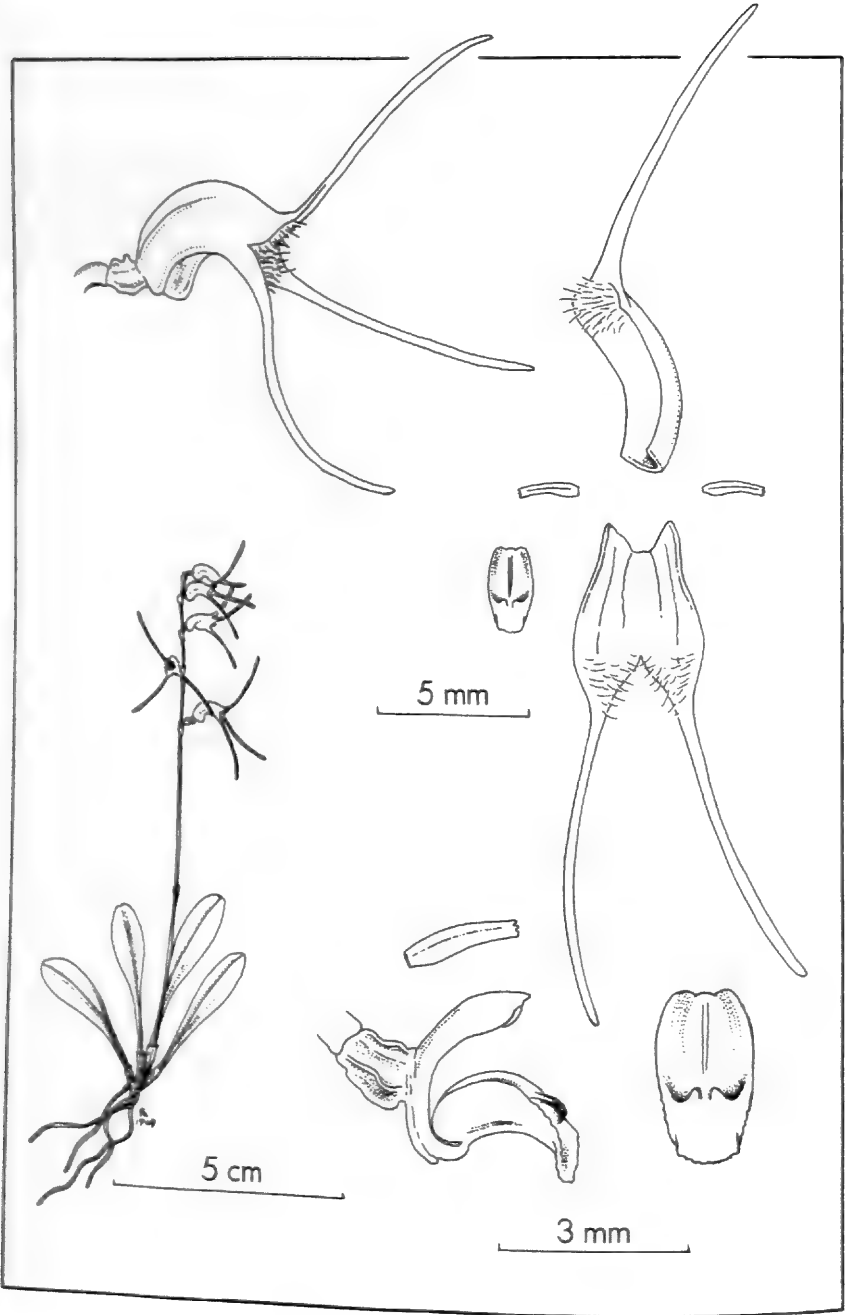


Plate 579. *Masdevallia chaetostoma*

Masdevallia corazonica Schltr., *Repert. Spec. Nov. Regni Veg. Beih.* 8: 48, 1921.

Ety.: Named for Mt. Corazón, on whose flank this species was collected.

Syn.: *Masdevallia sphenopetala* Kraenzl., *Repert. Spec. Nov. Regni Veg. Beih.* 34: 41, 1925.

Ety.: From the Greek *sphenopetalon*, "a wedge-shaped petal," doubtlessly referring to the shape of a petal in a reconstituted state.

Plant small to very small, epiphytic, ascending-caespitose; roots slender. Ramicauls erect, slender, fasciculated, 3-20 mm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect to suberect, coriaceous, petiolate, 2-6 cm long including the petiole 1-2.5 cm long, the blade elliptical, 5-10 mm wide, narrowly cuneate below into the slender petiole. **Inflorescence** a simultaneously few-flowered raceme ca. 10 mm long borne by a slender, erect peduncle 2-7 cm long, with a close bract below the middle, from low on the ramicaul; floral bract inflated, 3-4 mm long; pedicel 1-4 mm long; ovary 1-1.5 mm long, with 3 undulate ribs; **sepals** creamy white, sometimes lightly spotted with purple, glabrous, occasionally sparsely pubescent within, the midveins carinate, the dorsal sepal oblong, concave, 5-9 mm long, 3-5 mm wide, connate to the lateral sepals for 4-4.5 mm to form a cylindrical tube, the free portion round with minutely erose margins, the apex abruptly contracted into a slender, yellow tail 2.5-12 mm long, the lateral sepals obovate, oblique, 5-9 mm long, 2-3 mm wide, connate 3-3.5 mm, constricted below the middle, the bases dilated to form a mentum below the column-foot, with a secondary mentum above the constriction, the acute apices contracted into slender tails 2.5-12 mm long; **petals** translucent white, oblong, 2-2.5 mm long, 0.3-0.4 mm wide, the apex truncate, apiculate to tridentate, the lower half minimally callous, with a slight dilatation above the base; **lip** yellow, more or less broadly elliptical when expanded, arcuate and conduplicate in the natural position, 2-3 mm long, 1-1.75 mm wide, the sides erect, broadly rounded, the apex rounded or obtuse, the disc channeled between a low pair of longitudinal calli, the truncate base notched, hinged on the end; **column** white, semiterete, 2-2.5 mm long, the foot equally long with a stout, incurved extension.

ECUADOR: **Pichincha:** in forests on the western slopes of Mt. Corazón, alt. 2500 m, Jan. 1878, A. Sodiro s.n. (Holotype: ?B); forests near Silanti on the western slopes of Mt. Corazón, alt. 2000-2300 m, F.C. Lehmann 6744 (holotype of *M. sphenopetala*: K); same area, forests along the new road between Quito and Santo Domingo, alt. ca. 2000 m, 2 Feb. 1977, C. Luer, J. Luer & A. Hirtz 2453 (SEL); same area, alt. 1950 m, 31 Mar. 1984, C. Luer, S. Dalström, T. Höijer, J. Kuijt & A. Hirtz 9834 (MO). **Bolívar:** cloud forest west of Guaranda, alt. 3100 m, 26 Mar. 1984, C. Luer, S. Dalström, T. Höijer, J. Kuijt & A. Hirtz 9739 (MO); cloud forest above Chillanes, alt. 2300 m, 25 Mar. 1984, C. Luer, S. Dalström, T. Höijer, J. Kuijt & A. Hirtz 9704 (MO).

This little species is endemic and rather frequent in the forests of west-central Ecuador. Always small, it is still variable in size vegetatively and florally. The raceme of little yellowish, broadly tubular flowers is crowded and more or less distichous at the apex of a slender peduncle. The tiny, translucent petals are tridentate at the apex. The distinctive lip is arcuate and conduplicate with erect margins below the broadly obtuse apex.

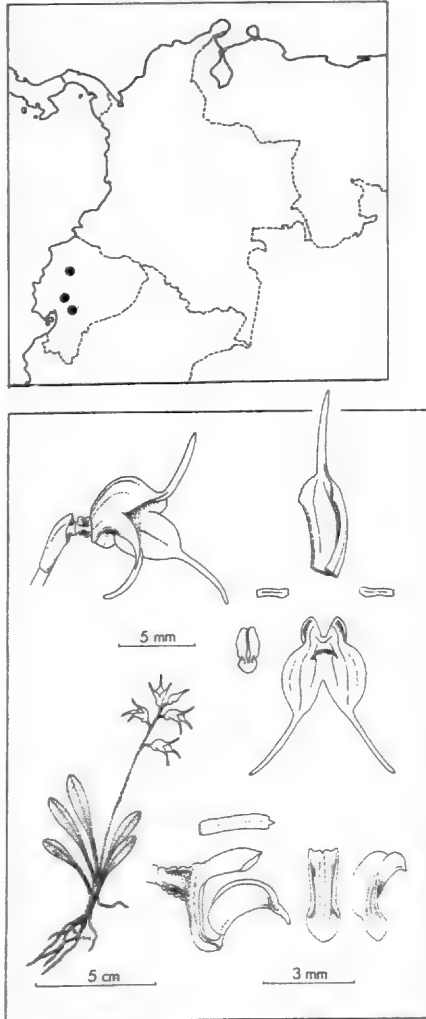


Plate 580. *Masdevallia corazonica*

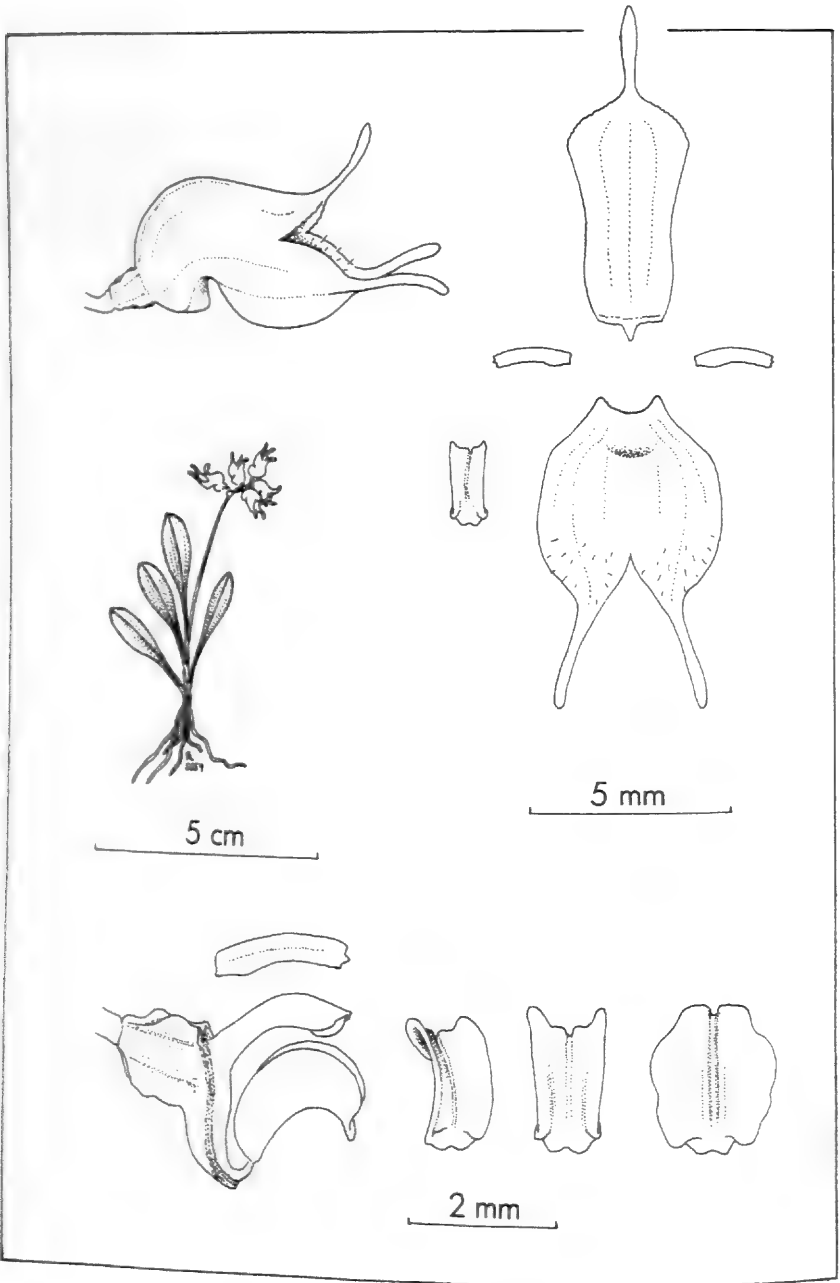


Plate 581. *Masdevallia corazonica*

Masdevallia dalstroemii Luer, *Orchideer* 5: sub 194, 1984.

Ety.: Named in honor of its discoverer Stig Dalström, formerly of Falun, Sweden.

Plant medium in size, epiphytic, ascending-caespitose; roots slender. Ramicauls slender, 3-4.5 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, 9-13 cm long including the petiole 1-3 cm long, the blade elliptical, subacute, 2.2-3.3 cm wide, narrowly cuneate below into the slender petiole. **Inflorescence** a loose, simultaneously several-flowered raceme up to 8 cm long, borne by a slender, suberect peduncle 6-9 cm long, with a bract below the middle, from low on the ramicaul; floral bract inflated, 3 mm long; pedicel 2 mm long; ovary 1.5 mm long, with lightly undulate wings; **sepals** dull white, finely and diffusely dotted with red-purple, minutely pubescent externally and internally, the margins minutely erose, the dorsal sepal ovate, concave, 12-13 mm long, 8 mm wide expanded, connate to the lateral sepals for 3.5 mm to form a gaping, sepaline cup, the subacute apex contracted into a yellow, clavate tail dotted with purple, 15 mm long, 0.75 mm thick near the apex, the lateral sepals elliptical, 12-13 mm long, 4.5 mm wide, connate 1.5 mm, the acute apices contracted into tails similar to that of the dorsal sepal; **petals** white, oblong, 3.5 mm long, 1.5 mm wide, the truncate apex obtusely tridentate, the margins serrulate, the labellar half with a longitudinal carina; **lip** light tan with brown dots, oblong-subpandurate, 4 mm long, 2 mm wide, lightly constricted in the distal quarter with the apex rounded, convex, revolute, the truncate base hinged beneath; **column** white, semiterete, 4 mm long, the foot thick with a short, incurved extension.

ECUADOR: **Bolívar**: epiphytic in cloud forest north of Chillanes, alt. 2650 m, 25 Mar. 1984, C. Luer, S. Dalström, T. Höijer, J. Kuijt, & A. Hirtz 9725 (Holotype: MO); at the pass north of Chillanes, alt. 2800 m, 11 Feb. 1990, S. Dalström & L. Årnby 1337 (MO).

This handsome species is apparently endemic in west-central Ecuador where it has been found on only a few occasions since its discovery by Stig Dalström in 1984. It was first found in a humid, forested pass in the company of numerous other orchids. Several showy, diffusely purple-dotted flowers are borne simultaneously in a loose raceme. It is distinguished from other members of the subgenus by the short pubescence on both the outer and inner surfaces of the sepals, and a narrow dorsal sepal with an erect, slender tail. Both margins of the petals are serrate below the tridentate apex. The apex of the lip is broadly rounded, convex and recurved beyond a slight constriction.



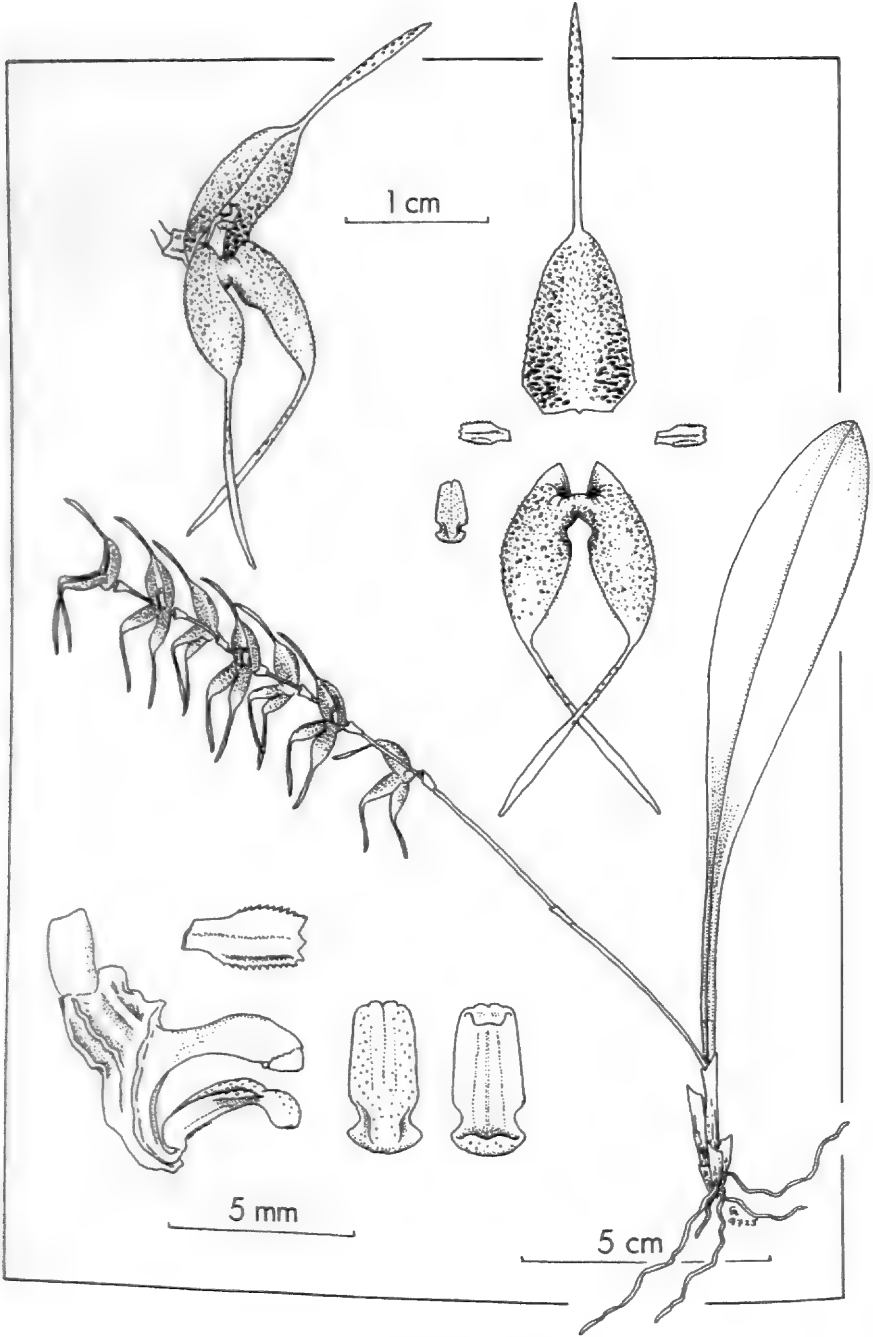


Plate 582. *Masdevallia dalstroemii*

Masdevallia delphina Luer, *Phytologia* 39: 194, 1978.

Ety.: From the Latin *delphinus* (Greek *delphos*), "a dolphin or porpoise," in allusion to the resemblance of the flower to the head of a dolphin.

Plant small, epiphytic, ascending-caespitose; roots slender. **Ramicauls** erect, slender, 1-2.5 cm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, 3-8 cm long including the petiole 1.5-3 cm long, 0.8-1.4 cm wide, the blade narrowly elliptical, subacute, gradually narrowed below into the channeled petiole. **Inflorescence** an erect, loose, subsecund, nearly simultaneously several-flowered raceme, up to 23 cm tall including the slender peduncle, with 1-2 bracts, from low on the ramicaul; floral bracts thin, tubular, 3-4 mm long; pedicel 4-6 mm long; ovary 1-2 mm long, lightly carinate; **sepals** lavender, suffused and dotted with purple, glabrous externally, shortly pubescent within above the middle, the dorsal sepal oblong-obovate, concave, 5-8.5 mm long, 4 mm wide expanded, connate to the lateral sepals for 4-5 mm to form a subglobose, lightly arcuate tube, the free portion produced into an ovoid, yellow to purplish tail 2-2.5 mm long, 1.5 mm wide, 1 mm thick, the lateral sepals connate 2.5-3.5 mm into an oblong, concave, bifid lamina 4-6 mm long, 4 mm wide expanded, forming a mentum with the column-foot below a constriction between the column-foot and the secondary mentum, the obtuse apices produced into thick tails similar to that of the dorsal sepal; **petals** translucent white with a few purple spots, oblong, 2.5 mm long, 0.6 mm wide, the apex variable from acute to tridentate, the labellar margin with a thin, longitudinal callus; **lip** purple to white marked with purple, oblong-subpanduriform, 2.5-3.5 mm long, 1.1-1.5 mm wide above the middle, with a pair of marginal, obtusely angled folds near the middle, the epichile suborbicular, with undulate, minutely erose margins, the hypochile oblong with erect, rounded sides, the base subcordate, hinged beneath; **column** red to greenish white suffused with purple, semiterete, 2-3 mm long, the foot 1.5-2 mm long with a short, incurved extension.

ECUADOR: **Loja**: western slopes of the Cordillera, alt. 2000 m, Dec. 1974, collected by B. Malo, cultivated at Tarqui near Cuenca, 16 July 1977, *C. Luer 1716* (Holotype: SEL); without locality, collected by B. Malo, cultivated by M. & O. Robledo at La Ceja, Colombia, 12 Oct. 1977, *C. Luer 1998* (JAUM, SEL). **Pichincha**: epiphytic in cloud forest between Mindo and Puerto Quito, alt. 1600 m, 13 Mar. 1982, *C. Luer, A. Hirtz & S. Dalström 7339* (SEL).

This little species occurs uncommonly in forests of western and southwestern Ecuador. It is characterized by the loose, several-flowered raceme of little, tubular flowers constricted near the middle and more or less inflated on either side of the constriction. The tails are short, thick and terete, vaguely giving the impression of a bottle-nosed dolphin.

Masdevallia delphina is related to the larger *M. bulbophyllopsis* with a cylindrical sepaline tube with similar but larger and thicker sepaline "tails." The petals are tridentate at the apex. The epichile of the lip is undulate and rounded, broader than the hypochile



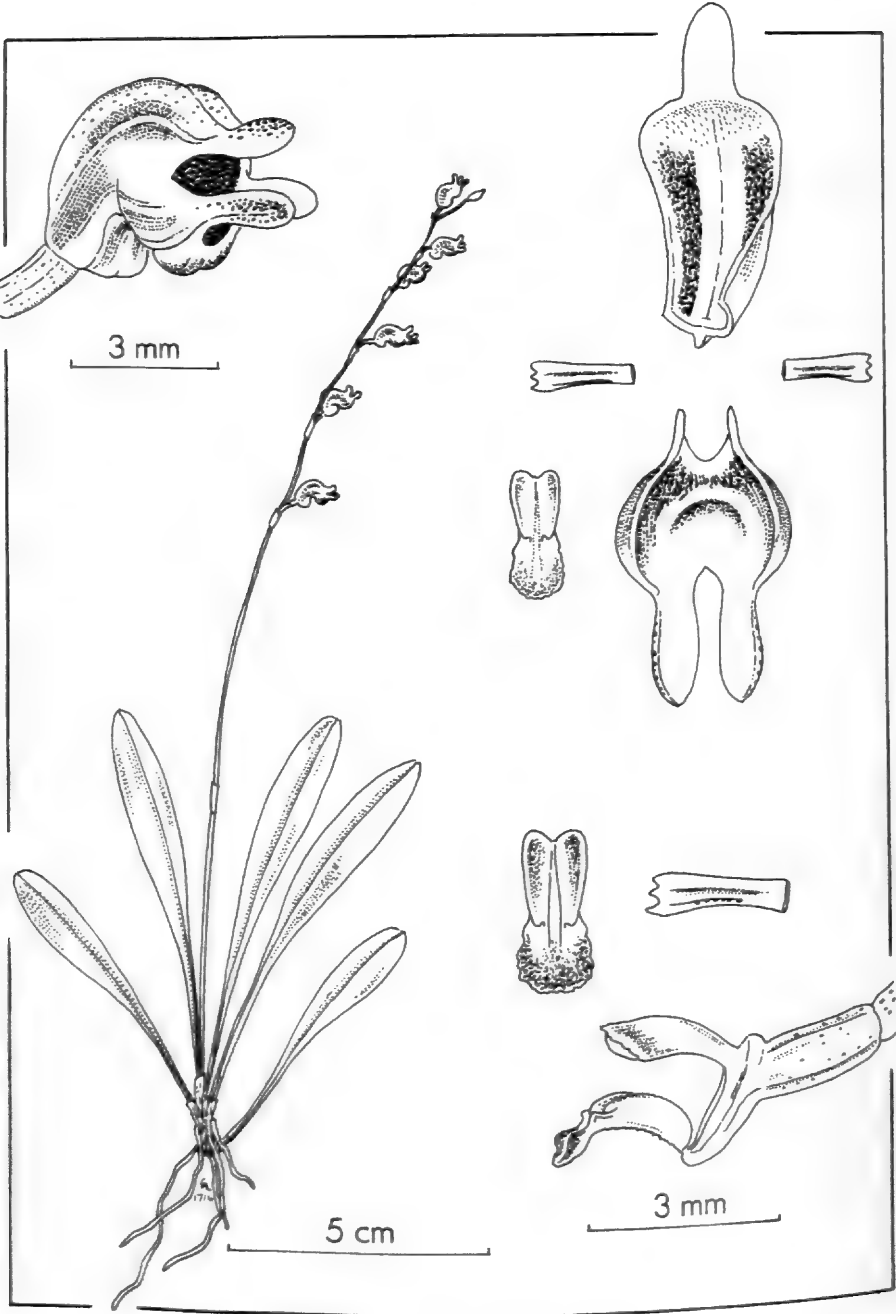


Plate 583. *Masdevallia delphina*

Masdevallia dimorphotricha Luer & Hirtz, *Lindleyana* 10: 117, 1995.

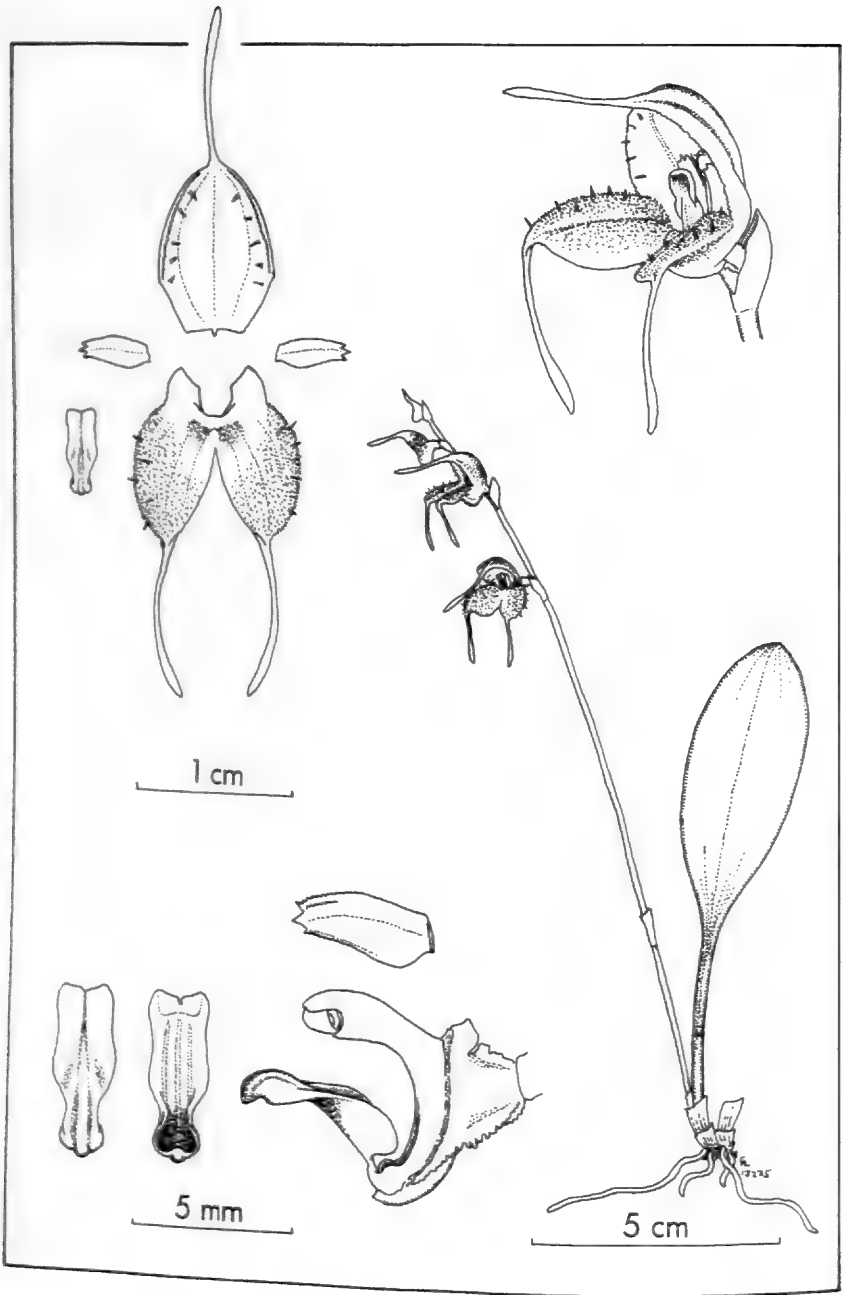
Ety.: From the Greek *dimorphotrichus*, "with two kinds of hairs," referring to the pubescence.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1-2 cm long, enclosed by 2-3 thin tubular sheaths. **Leaf** erect, coriaceous, petiolate, 8 cm long including the petiole 2 cm long, the blade elliptical, obtuse, 2.3 cm wide, the base cuneate into the petiole. **Inflorescence** an erect to suberect, loosely few-flowered raceme of 3-4 flowers, 2 often mature simultaneously, 13 cm long including the peduncle 10-11.5 cm long, with 1-2 bracts below the raceme, from low on the ramicaul; floral bract inflated, 5 mm long; pedicel 3-4 mm long; ovary crested, 1.5 mm long, 2 mm broad; **sepals** red-purple, orange at the base, glabrous externally, diffusely short-pubescent within with scattered longer hairs, the dorsal sepal broadly ovate, concave, 10 mm long, 8 mm wide expanded, connate to the lateral sepals for 4 mm to form a shallow, sepaline cup, the apex obtuse, contracted into an orange tail 9-11 mm long, thickened in the distal third, the lateral sepals oblong, oblique, 10 mm long, 5.5 mm wide, connate 2 mm, the apices obtuse, contracted into orange tails similar to that of the dorsal sepal; **petals** light yellow, more or less oblong, oblique, unguiculate, 4.5 mm long, 1.8 mm wide, the apex tridentate-apiculate, with the middle tooth the largest, both margins denticulate above the middle, the labellar margin with a longitudinal carina, ending above the claw; **lip** dark purple, oblong-pandurate, 5 mm long, 2 mm wide, with obtuse marginal folds above the middle, the epichile obovate, obtuse, tricallous, with the margins decurved, the hypochile oblong with the base truncate, shallowly cleft, hinged below; **column** light yellow, semiterete, 4 mm long, the foot 4 mm long, broadly concave at the tip with a short, incurved extension.

ECUADOR: **Azuay**: Chaucha, between Cuenca and Molleturo, alt. 2500-2700 m, collected Feb. 1993 by A. Hirtz, cultivated by J & L Orchids in Easton, CT, 21 Oct. 1994, *J & L Orchids* 1094-467 (Holotype: MO), C. Luer illustr. 17275; between Soldados and Chaucha, alt. 2000 m, Feb. 1995, A. Hirtz 6190 (MO).

Plants of this species were found growing with *M. staaliana* in a valley that recently has become accessible with a new road southwest of Cuenca. It is closely allied to *M. staaliana*, but it differs from the latter with a taller inflorescence, the peduncle being longer than the leaf. The peduncle of *M. staaliana* is considerably shorter than the leaf. The sepals of *M. dimorphotricha* are deep purple, orange toward the base, glabrous externally, and with tails thickened in the distal half. Within, the sepals are covered by a dense, short pubescence from which emerge scattered, larger and longer hairs. The petals and lip of the two concepts do not differ significantly, except for the deep purple color of the lip of *M. dimorphotricha*. In cultivation the plants of each species flower simultaneously at different times of the year.



Plate 584. *Masdevallia dimorphotrica*

Masdevallia graminea Luer, *Phytologia* 42: 460, 1979.

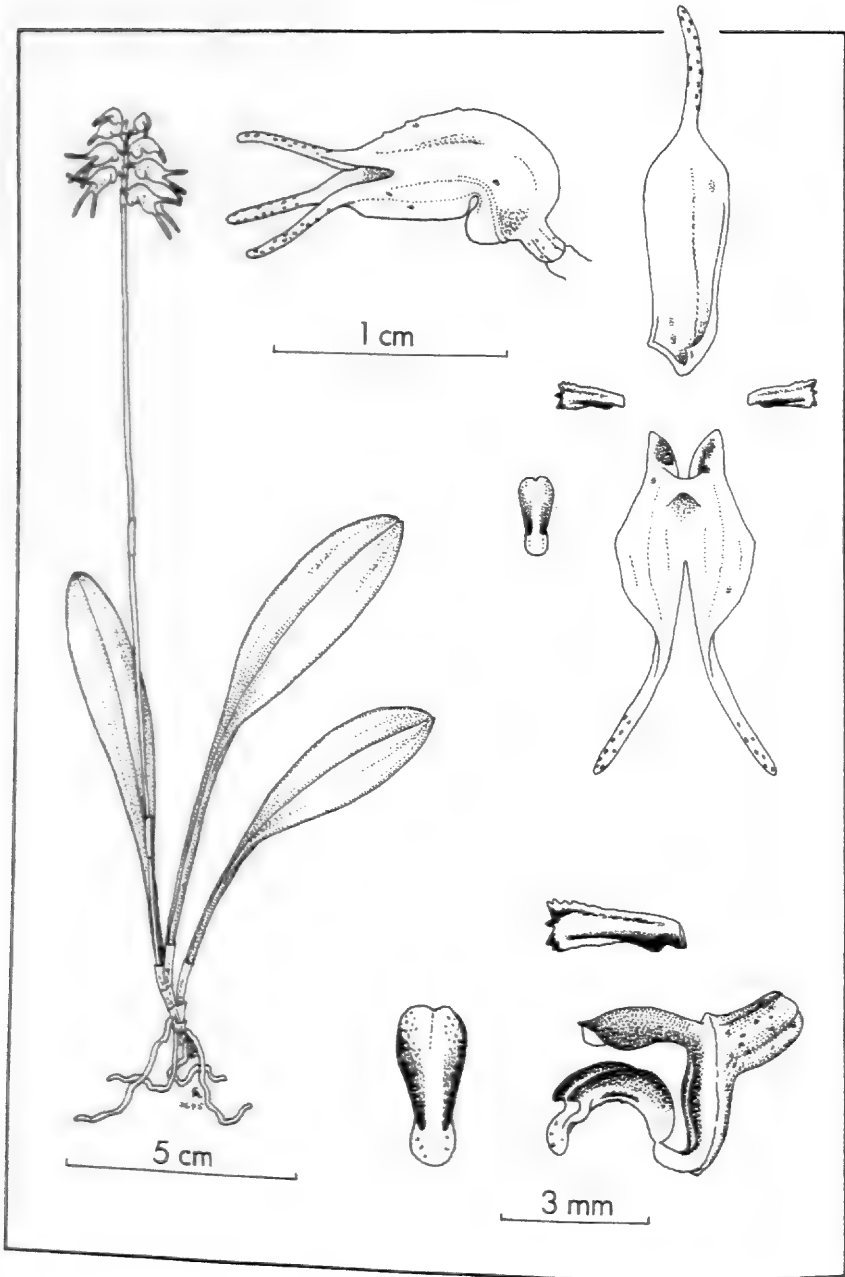
Ety.: From the Latin *gramineus*, "grasslike," referring to the habit of the plant.

Plant small to medium in size, epiphytic, the rhizome ascending to caespitose; roots slender. **Ramicauls** slender, erect, 1.5-2.5 cm long, enclosed by 2-3 close, tubular sheaths. **Leaf** erect to suberect, coriaceous, petiolate, 6-12 cm long including the petiole 2.5-5 cm long, the blade elliptical, obtuse, 1-2 cm wide, the base narrowly cuneate into the slender petiole. **Inflorescence** a congested, simultaneously several-flowered raceme, up to 3 cm long with up to 8 flowers, borne by an erect, slender peduncle, 12-23 cm long including the raceme, with 2-3 close but distant tubular bracts, from low on the ramicaul; floral bract thin, 2-3 mm long; pedicel 1.5-2 mm long; ovary green with purple dots, 1.5 mm long, without wings; **sepals** greenish to yellowish white with infrequent brownish dots, glabrous, the dorsal sepal oblong, concave, 10 mm long, 3.5 mm wide, connate to the lateral sepals for 7 mm to form an arcuate, sepaline tube, the triangular, free portion with minutely erose margins, the obtuse apex contracted into a slender, greenish tail 5-8 mm long, often dotted with purple, the lateral sepals obovate, oblique, 9 mm long, 3 mm wide, connate 5 mm across an acute transverse fold above the rounded mentum with the column-foot, the subacute apices contracted into tails similar to that of the dorsal sepal; **petals** translucent white, marked with purple, oblong-cuneate, 2.75 mm long, 1 mm wide, the apex subtruncate-retuse with a short apiculum, the margins irregularly dentate, the labellar margin with a longitudinal carina, thicker toward the base; **lip** white, marked with purple, rigidly arcuate, ovate-oblong, 3.25 mm long, 1.5 mm wide expanded, with erect margins ending in an acute angle, or lobe, above the middle, the terminal portion rounded, the base subcordate, hinged on the end; **column** red-purple, semiterete, 2.5 mm long, the foot equally long with a thick, incurved extension.

ECUADOR: **Chimborazo**: epiphytic in cloud forest near Pagma, alt. 2800-3000 m, June 1977, collected by Walter Teague, cultivated in San Francisco, CA, 15 Dec. 1978, *C. Luer* 3645 (SEL). **Bolívar**: epiphytic in cloud forest between Guaranda and Balzapamba, alt. ca. 2500 m, Aug. 1978, collected by A. Andreetta, A. Hirtz, C. Luer & J. Luer, cultivated by A. Andreetta in Cuenca, 11 Feb. 1979, *C. Luer* 3962 (SEL); epiphytic in cloud forest north of Chillanes, alt. 2650 m, 25 Mar. 1984, *C. Luer, A. Hirtz, S. Dalström, T. Höijer & J. Kuijt* 9717 (MO); south of Chillanes, alt. 2400 m, 11 Mar. 1991, *C. Luer, J. Luer, A. Hirtz et al.* 15000A (MO).

Masdevallia graminea is apparently restricted to the high cloud forests of southwestern Ecuador where it is infrequent. It is distinguished from the other members of the subgenus by the congested inflorescence of light green flowers borne by a long, slender peduncle, imparting a vague impression of a grass. The sepaline tube is arcuate, acutely deflexed above the mentum and with short, forwardly pointing tails. The petals are denticulate, and the lip is arcuate with erect margins below the middle.



Plate 585. *Masdevallia graminea*

Masdevallia hydrae Luer, *Phytologia* 46: 351, 1980.

Ety.: From the Latin *hydrae*, "fresh water polyps, or hydrae," in allusion to the appearance of the flowers.

Plant small, epiphytic, ascending-caespitose; roots slender. Ramicauls slender, erect, 1-1.5 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect to suberect, coriaceous, petiolate, 4-9 cm long including the petiole 2-3.5 cm long, the blade narrowly elliptical-obovate, subacute, 0.6-1 cm wide, gradually narrowed below into the slender petiole. **Inflorescence** a loose, simultaneously several-flowered subsecund raceme up to 5 cm long, 12-18 cm long including the slender, erect peduncle, with 2 distant bracts, from low on the ramicaul; floral bracts 4-5 mm long; pedicel 4-5 mm long; ovary dotted with purple, 2 mm long, lightly costate; **sepals** light green, dotted with purple, especially along the veins, glabrous externally, sparsely long-pubescent within, the dorsal sepal oblong, concave, 7 mm long, 4 mm wide, connate to the lateral sepals for 6 mm to form an urceolate, sepaline tube, the free portion transversely triangular, the obtuse apex contracted into a 7 mm long, ascending, purple-dotted tail, the lateral sepals, elliptical, 6.5 mm long, connate 5 mm into a concave lamina 5 mm wide, constricted above the base forming a mentum below the column-foot, the subacute apices contracted into spreading tails similar to that of the dorsal sepal; **petals** translucent greenish white, oblong, the truncate apex erose, the lower margin lightly callous; **lip** green, heavily marked with purple, subpandurate, arcuate, 2.5 mm long, 1.25 mm wide, with the erect margins of the hypochile continuing onto the epichile as erose lamellae, the epichile flabellate, minutely verrucose, the apex rounded, erose, the base subcordate, hinged on the end; **column** green, spotted with purple, semiterete, 3 mm long, the foot thick, equally as long with a short, thick, incurved extension.

ECUADOR: **Loja**: epiphytic in cloud forests of the western slopes of the cordillera, alt. 2000 m, Dec. 1974, collected by B. Malo, cultivated at Tarqui near Cuenca, 16 July 1977, *C. Luer* 1717 (Holotype: SEL); Occidente de Loja, alt. 2000 m, collected by A. Andreetta & M. Portilla, cultivated at Paute, 24 May 1988, *C. Luer* 13624 (MO). **Pichincha**: Canchacoto, north of Tandapi, alt. 2000 m, July 1989, *A. Hirtz & X. Hirtz* 4273 (MO). **Cotopaxi**: Reserva Otonga near Las Pampas, alt. 2200 m, Feb. 2000, *L. Jost* 1830 (MO). **Bolivar**: epiphytic in cloud forest west of Guaranda, alt. 2700 m, Aug. 1978, collected by A. Andreetta, A. Hirtz, J. Luer & C. Luer, cultivated by A. Andreetta in Cuenca, 11 Feb. 1979, *C. Luer* 3964 (SEL).



This small species grows sympatrically with several other species of the subgenus in the damp, wooded valleys of southwestern Ecuador. From the other members of the subgenus, it is distinguished by the several, distant, tubular flowers dotted with purple and with slender tails diverging from the constricted orifice of the tube, suggesting the tentacles surrounding the mouth of a hydra. A few long hairs are present within. The petals are narrowly oblong and entire. The apex of the lip is broadly flabellate and decurved below crested margins of the calli from the hypochile.

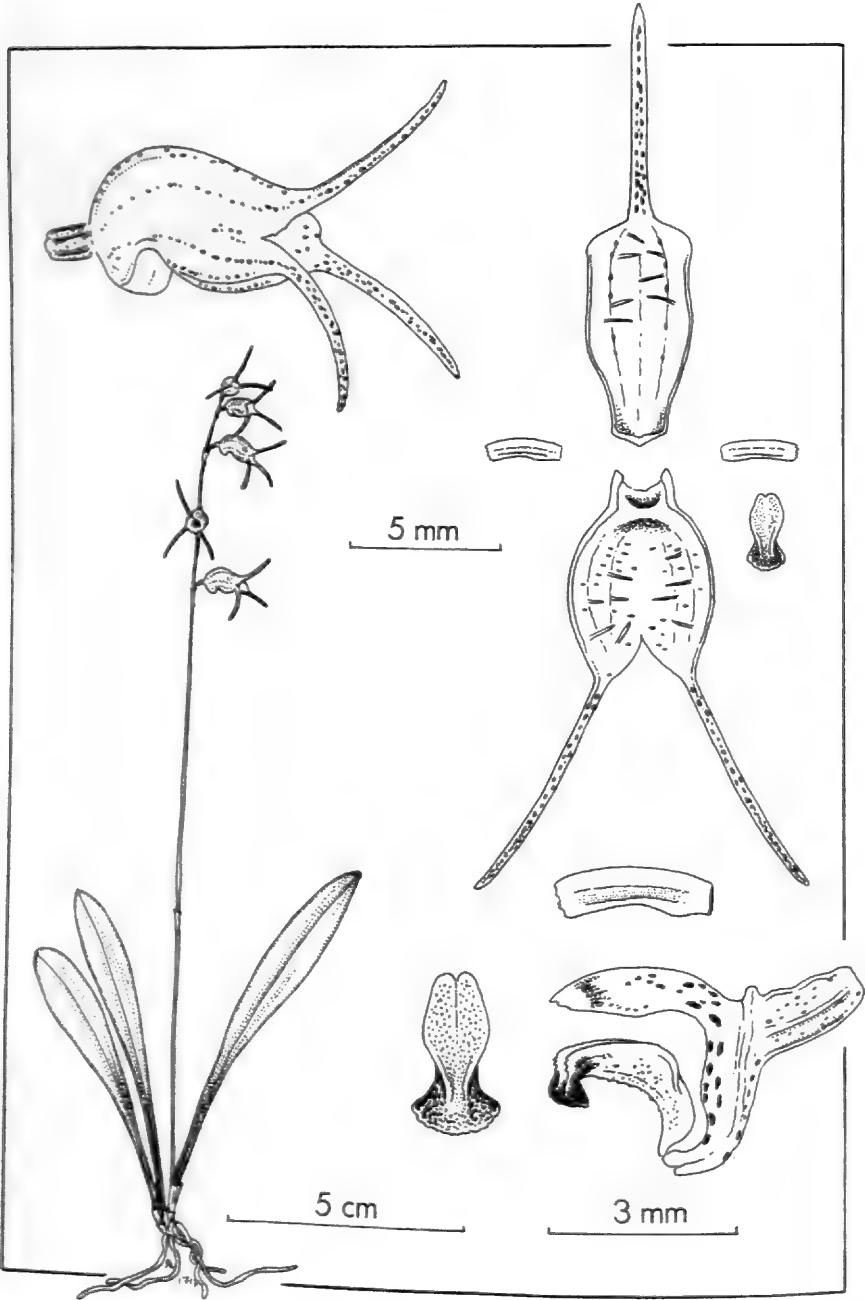


Plate 586. *Masdevallia hydrae*

Masdevallia lehmannii Rchb.f., Gard. Chron. n.s. 8: 38, 1877.

Ety.: Named in honor of F.C. Lehmann, German consul at Popayán, Colombia, who discovered this species as well as numerous others.

Plant medium in size to large, epiphytic, the rhizome ascending to caespitose; roots slender. Ramicauls erect, stout, 2-4.5 mm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect to suberect, coriaceous, petiolate, 10-18 cm long including the petiole 3-6 cm long, the blade elliptical, obtuse, 2.5-3.5 cm wide, cuneate below into the channeled petiole. **Inflorescence** a subsecund, densely and simultaneously many-flowered raceme up to 10 cm long, of up to 15 flowers, borne by a slender, suberect peduncle up to 20 mm long, with 2 distant bracts, from low on the ramicaul; floral bracts inflated, 4-6 mm long; pedicel 2-4 mm long; ovary green, dotted with purple, 2-4 mm long, with irregular wings; **sepals** yellow-orange, yellow or white, variously spotted with red or purple, variously short-pubescent externally, variously long-pubescent within, the dorsal sepal suborbicular, concave, 6-8 mm long, 6-7 mm wide, connate to the lateral sepals for 3 mm to form a gaping, subglobose, sepaline cup, the obtuse to rounded apex contracted into a slender tail 10-25 mm long, the lateral sepals oblong, 7-8 mm long, 3 mm wide, connate 2 mm over a transverse fold above the mentum, the obtuse apices contracted into tails similar to that of the dorsal sepal; **petals** white, oblong, 4-4.5 mm long, 1.5 mm wide, the margins serrate, the apex truncate with an acute apiculum, the labellar margin with a longitudinal carina; **lip** orange, dotted with red or brown, oblong-pandurate, 4-4.5 mm long, 1.5 mm wide, with marginal folds above the middle, the epichile round, the disc lightly channeled, the hypochile oblong with the base subcordate, hinged below; **column** white, edged in purple, semiterete, 3 mm long, the stout, equally long, with a short, thick, incurved extension.

ECUADOR: **Loja**: epiphytic in dense forest, Cordillera de Amboca between Zaruma and El Cisne, alt. 2000-2500 m, Oct. 1876, F.C. *Lehmann 7005* (Holotype: W; Isotypes: AMES, K, LE, US); same area, collected by B. Malo, cultivated near Tarqui, 15 Feb. 1979, C. *Luer 3967* (SEL). **Bolívar**: forest between Chimbo and Balsapamba, alt. 2500 m, Dec. 1877, A. *Rimbach 370* (?); below Guaranda, alt. 2400 m, June 1975, collected by A. Andreetta & W. Teague, flowered by A. Andreetta in Cuenca, A. *Andreetta 63* (SEL).

This species is little more than a variation of the polymorphic *M. polysticta*. It occurs in the humid valleys of semi-arid southwestern Ecuador where not only is *M. polysticta* frequent, but also where several locally endemic species of the subgenus occur as well. It differs from *M. polysticta* by a usually longer and more congested raceme of more flowers that are light yellow to yellow-orange. The sepals are shortly and densely pubescent externally, and variously sparsely pubescent within. The sepals are variously spotted, or dotted with red or red-brown. The morphology of the sepals, petals and lip are too similar to draw any distinction.

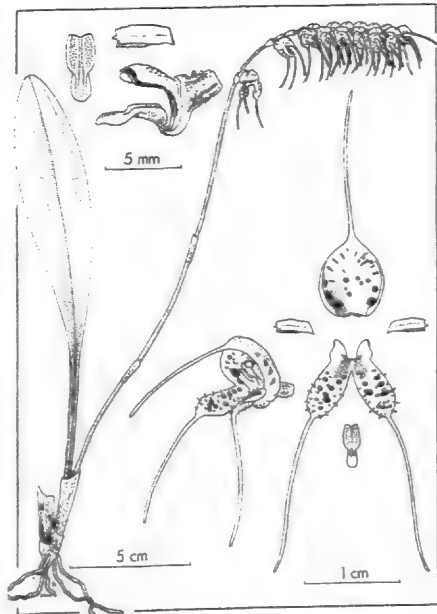


Plate 587. *Masdevallia lehmannii*

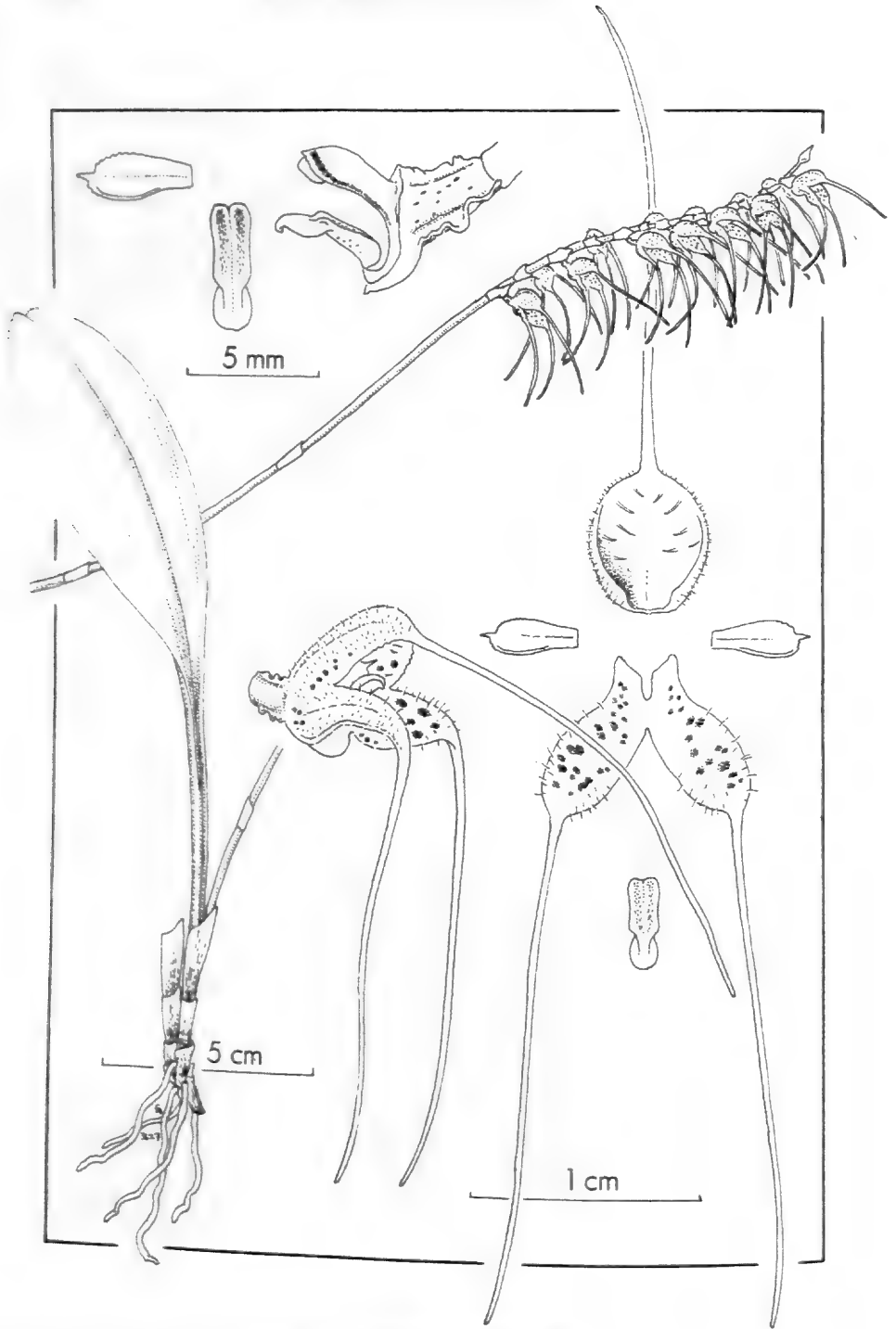


Plate 588. *Masdevallia lehmannii*

Masdevallia leptoura Luer, *Phytologia* 54, 381, 1983.

Ety.: From the Greek *leptourus*, "slender-tailed," referring to the slender tails compared to those of typical *M. pachyura* Rehb.f.

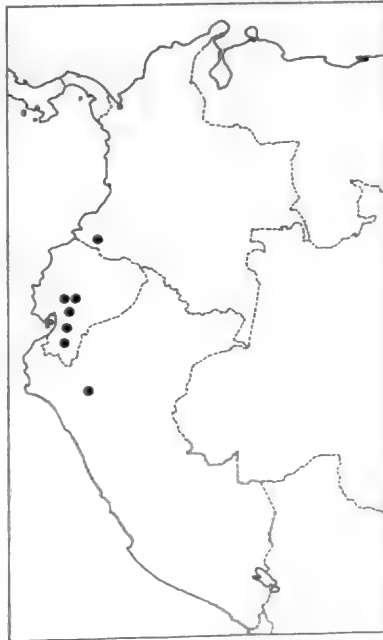
Syn.: *Masdevallia pachyura* subsp. *leptoura* (Luer) Luer, *Lindleyana* 3: 44, 1988.

Plant medium in size, epiphytic to terrestrial, caespitose; roots coarse. Ramicauls erect, 3-4 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, long-petiolate, 8-15 cm long including the petiole 3-6 cm long, the blade elliptical, subacute to obtuse, 2-3 cm wide, the base cuneate into the petiole. **Inflorescence** a loosely several-flowered, erect to suberect raceme of 4-9 simultaneous flowers, 15-25 cm long including the peduncle, with 1-2 bracts below the raceme, from low on the ramicaul; floral bract inflated, 5-6 mm long; pedicel 5-7 mm long; ovary 3-4 mm long with 3 undulating crests; **sepals** glabrous, pale yellow-green or whitish, with purple dots or bars usually arranged transversely, the dorsal sepal ovate, concave, 12-15 mm long, 12-15 mm wide expanded, connate to the lateral sepals for 5 mm to form a shallow, gaping cup, the rounded apex contracted into a slender, yellow tail 8-12 mm long, the lateral sepals oblong, 12-14 mm long, 4-6 mm wide, connate 1.5 mm, the oblique apices contracted into slender tails similar to that of the dorsal sepal; **petals** white, more or less oblong, 6 mm long, 2.5 mm wide, the truncate apex apiculate, both margins denticulate above the middle, the labellar margin with a longitudinal callus, the base unguiculate; **lip** brown to green, suffused and dotted with purple, oblong-subpandurate, 6 mm long, 2.5 mm wide, with obtuse or acute marginal folds above the middle, the epichile oblong, rounded, the hypochile oblong, cleft, with the base truncate, hinged below; **column** green with purple margins, semiterete, 6 mm long, the thick foot 3 mm long with a short, incurved extension.

ECUADOR: **Bolívar**: terrestrial along road west of Guaranda, alt. 2800 m. 10 Mar. 1982, C. Luer & S. Dalström 7264 (Holotype: SEL); between Guaranda and Pueblo Viejo, alt. 3100 m, 26 Mar. 1984, C. Luer, S. Dalström, T. Höijer, J. Kuijt & A. Hirtz 9749 (MO). **Cañar**: between Cuenca and Guayaquil, collected by E. Sánchez, 16 Nov. 1979, cultivated at SEL, 25 Dec. 1979, C. Luer 4840 (SEL). **Chimborazo**: east of Pallatanga, alt. 2200 m, 13 Nov. 1979, C. Luer, J. Luer & A. Hirtz 4808 (SEL). **Azuay**: "Shaglli," alt. 2400 m, flowered by A. Andreetta at Paute, 16 May 1988, C. Luer 13395 (MO). **Loja**: between Celica and Zapotillo, alt. 2100-2200 m, 23 Feb. 1985, G. Harling & L. Andersson 22464 (AMES, GB); east of Olmedo, alt. 2100 m, 4 Feb. 1993, S. Dalström, T. Höijer & H. Wanntorp 1846 (MO).

COLOMBIA: **Nariño**: without specific locality, collected by J. Aguirre, cultivated at Colomborquí-deas, 9 July 1996, C. Luer 17982 (MO).

PERU: **Cajamarca**: Santa Cruz, epiphytic below the camp, alt. 1350 m, 28 Jan. 1989, S. Leiva 024 (F).



This taxon has long been identified with *M. pachyura* with which it is sympatric in southwestern Ecuador. The two are very similar except for the shorter, thick, colorful tails of the latter. *Masdevallia*

leptoura occurs relatively frequently on the western declivities of the Andes of Ecuador. It is often seen forming huge specimens in cultivation.

The slender-tailed *M. leptoura* is illustrated in Curtis' *Botanical Magazine Plate 8361* and identified as *M. pachyura*. Because of the differences in the tails, the species are readily recognized, in spite of the similarity of the other parts of the flower. The flowers of *M. leptoura*, however, are even more similar to those of *M. amanda*, a smaller, fewer-flowered species. There are numerous distinct clones of *M. leptoura* with flowers densely spotted to unspotted.

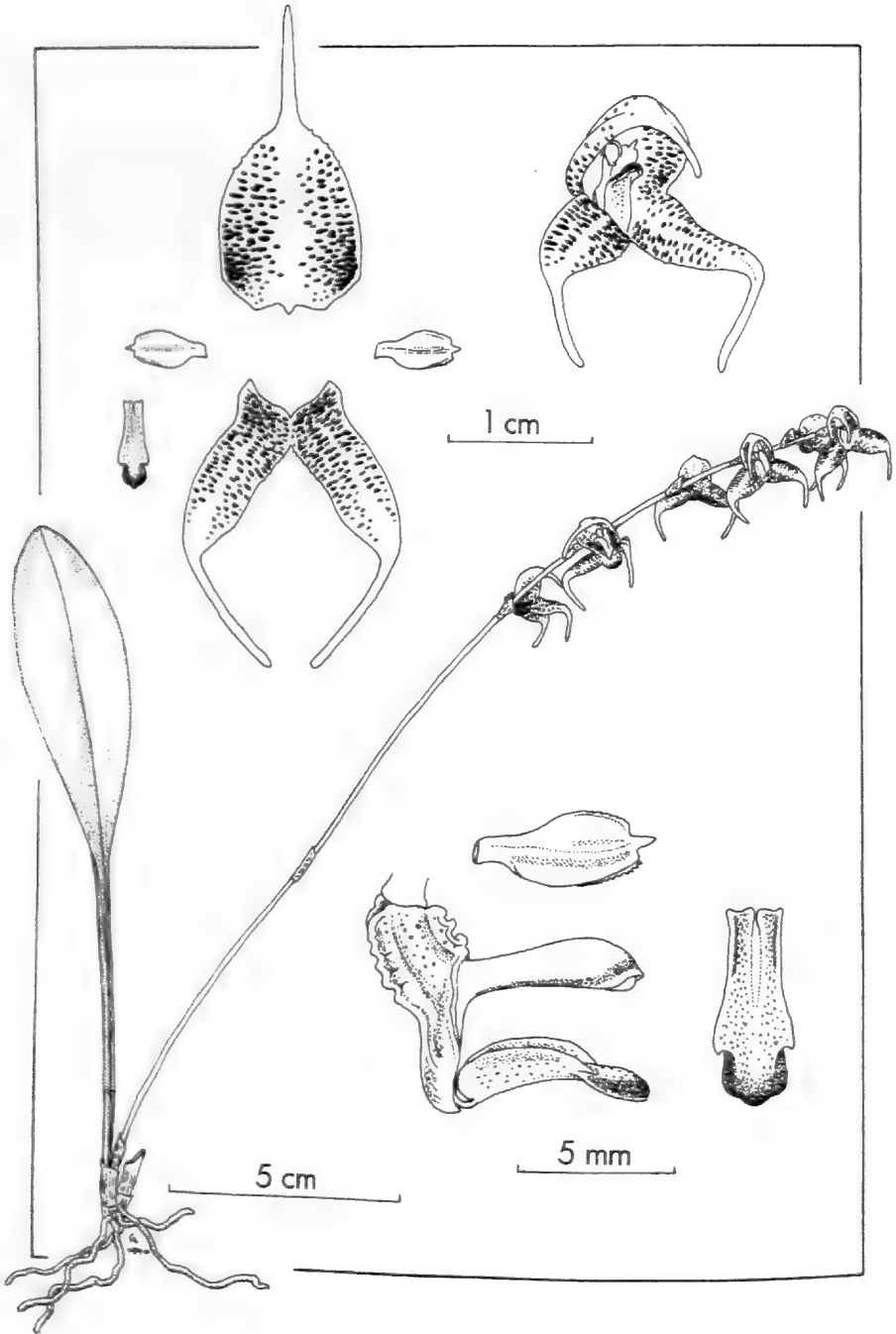


Plate 589. *Masdevallia leptoura*

Masdevallia melanopus Rchb.f., Gard. Chron. n.s. 1: 388 et 2: 322, 1874.

Ety.: From the Greek *melanopus*, "black-footed," referring to the blackish color of the ovaries, base of the perigon, and sepaline tails when the flowers are dried.

Plant medium in size, epiphytic, ascending-caespitose; roots slender. Ramicauls slender, erect, 1-2.5 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, coriaceous, 4-9 cm long including an indistinct petiole 1-2 cm long, the blade narrowly elliptical-oblong, subacute, 1-1.5 cm wide, narrowly cuneate below into the petiole. **Inflorescence** 10-15 cm long, including a loose, secund to subsecund, simultaneously several-flowered raceme up to 7 cm long, with the peduncle slender, erect, with 2 distant bracts below the middle, from low on the ramicaul; floral bracts thin, inflated, 3-5 mm long; pedicels 2-3 mm long; ovary 2 mm long, dotted with purple, with undulate ribs; **sepals** green, diffusely dotted with purple, glabrous, the blade of the dorsal sepal obovate, concave, 7-8 mm long, 3.5-4 mm wide expanded, connate to the lateral sepals for 4-5 mm to form an arcuate tube, the free portion triangular, subacute, contracted into a thick, green tail 4 mm long, the lateral sepals ovate, oblique, 5-6 mm long, 1.5 mm wide, 3 mm wide together expanded, connate 2.5-3 mm to form a mentum below the column-foot, the free portions continuous into thick, green tails 4-5 mm long; **petals** light green to white, dotted with purple, oblong, 2 mm long, 1 mm wide, the apex truncate, shallowly tridentate, with a black apiculum, the margins denticulate or shortly fimbriate, the labellar half with a longitudinal callus ending above the base in a slight swelling; **lip** yellow, heavily suffused with purple-black, oblong-ovate, 3.5 mm long, 1.5 mm wide, with marginal folds above the middle from a pair of low, longitudinal calli on the disc, the apex oblong, rounded, the base cordate, hinged below; **column** green, marked with purple, semiterete, 2.5 mm long, the foot 2 mm long with a short, incurved extension.

PERU: Without locality, *B. Roezl s.n.* (Holotype: W).

Piura: epiphytic in wooded valley west of Huanca-bamba, alt. 2750 m, Aug. 1980, *W. Königler, H. Königler, J. Luer, C. Luer & M. Arias K-47b* (K, M, SEL, W, Herb. H. Königler).

This species is local and infrequent in the damp forested valleys of semi-arid northwestern Peru, where it was first collected by Benedict Roezl along with *M. abbreviata* and *M. melanoxantha*. Very likely, it also occurs in adjacent Ecuador.

Vegetatively, *M. melanopus* is indistinguishable from other related, small species. Most distinctive are short pedicels no longer than the floral bracts. The flowers are tubular and arcuate, with thick greenish or yellowish tails that are shorter than the blade. The sepals are greenish and diffusely dotted with dark purple. The petals are denticulate-fimbriate and marked with purple. The lip is dark purple and shallowly channeled between longitudinal calli.

A very similar species, *M. xanthodactyla*, occurs in southwestern Ecuador. It is distinguished from *M. melanopus* by longer pedicels, whitish or pale yellow sepals spotted with purple, and yellow tails and lip. From both of them, *M. abbreviata* is distinguished by longer, more slender tails.



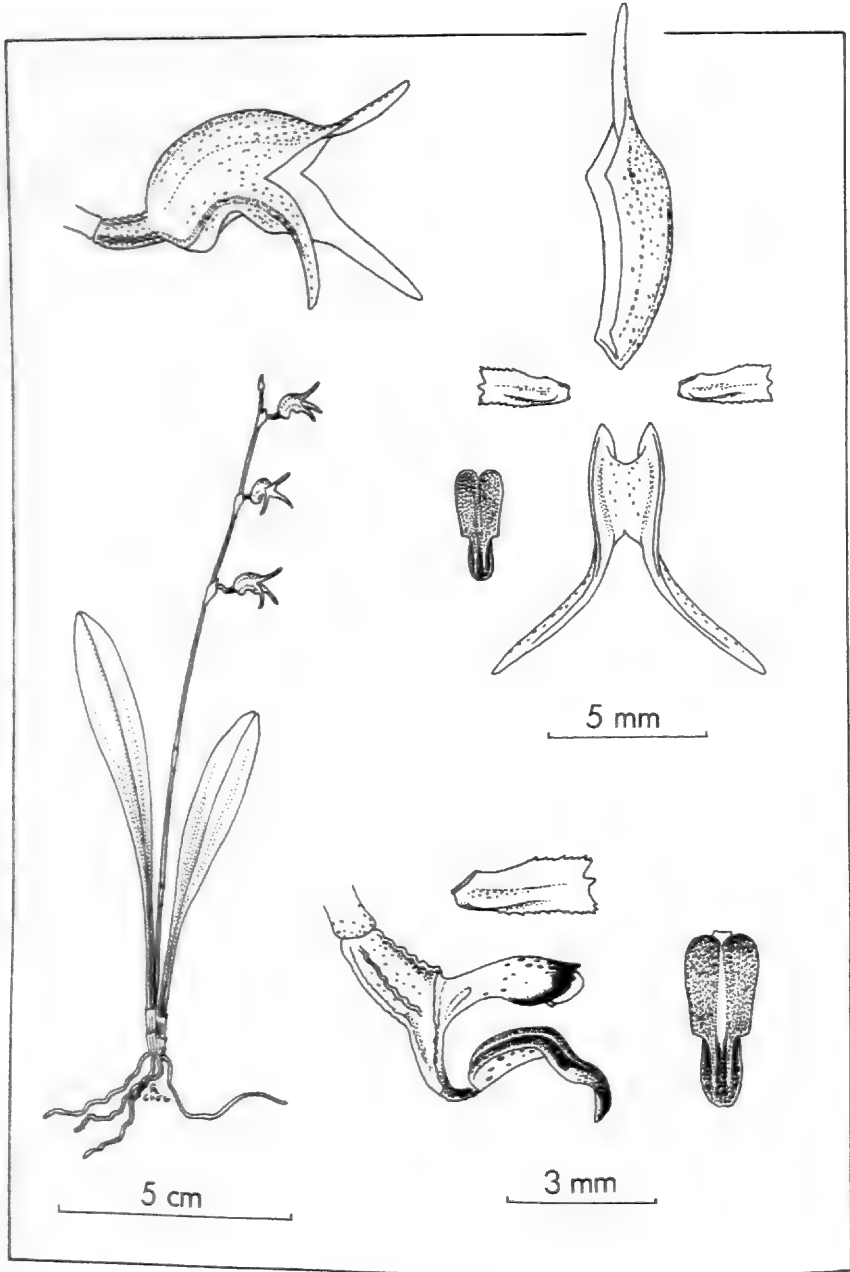


Plate 590. *Masdevallia melanopus*

Masdevallia microsiphon Luer, *Phytologia* 39: 213, 1978.

Ety.: From the Greek *mikrosiphon*, "a small tube," in reference to the minute, sepaline tube.

Plant very small, epiphytic, ascending-caespitose; roots slender. Ramicauls erect, slender, 6-8 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** suberect, coriaceous, 30-35 mm long including the petiole ca. 10 mm long, the blade narrowly obovate, obtuse, 5-6 mm wide, the base gradually narrowed into the petiole. **Inflorescence** an erect, distantly few-flowered raceme of minute, simultaneous, tubular flowers, up to 12 cm long including the filiform peduncle, with a tubular bract near the middle and at the base, from low on the ramicaul; floral bracts thin, tubular, 2 mm long; pedicel 1.5 mm long; ovary costate, 1.5 mm long; **sepals** greenish white, glabrous, the dorsal sepal obovate-oblong, concave, 6 mm long, 2.5 mm wide, connate to the lateral sepals for 4.5 mm to form a lightly arched, cylindrical tube, the free portion produced into a yellow, thickened, obtuse apex, the lateral sepals ovate, oblique, 5.5 mm long, 1.5 mm wide, connate 2.5 mm, forming a broad mentum with the column-foot, the free portions produced into thickened, obtuse, yellow apices; **petals** translucent white, linear-oblong, 1.5 mm long, 0.3 mm wide, the truncate apex lightly retuse or bilobed, the lower half faintly callous longitudinally; **lip** yellow, oblong, 2.5 mm long, 1.25 mm wide, the apex rounded, the margins of the lower two-thirds broadly rounded and sub-erect ending with callous, obtuse angles at the upper third, the disc lightly channeled centrally, the cordate base hinged on the end; **column** greenish white, semiterete, 2 mm long, the thick foot 1 mm long with the apex lightly incurved.

ECUADOR: **Loja**: western slopes of the cordillera, alt. 2000 m, Dec. 1974, collected by B. Malo, cultivated at Tarqui near Cuenca, 16 July 1977, *C. Luer* 1719 (Holotype: SEL).

This, one of the smallest members of subgenus *Amanda*, is apparently endemic in the same damp, forested valleys of semi-arid, southwestern Ecuador as are most other closely allied members of the subgenus. It is an inconspicuous, little species that is seldomly collected. The raceme of a few, distant, minute, tubular flowers resembles those of species once attributed to *Physosiphon* Lindl.

The sepals are deeply connate into a five millimeter-long, cylindrical tube, with the free apices very short, thick and obtuse. Deep within the tube the petals are narrowly oblong, membranous and entire, and the lip is obscurely divided into a short, rounded epichile and oblong hypochile with erect margins.



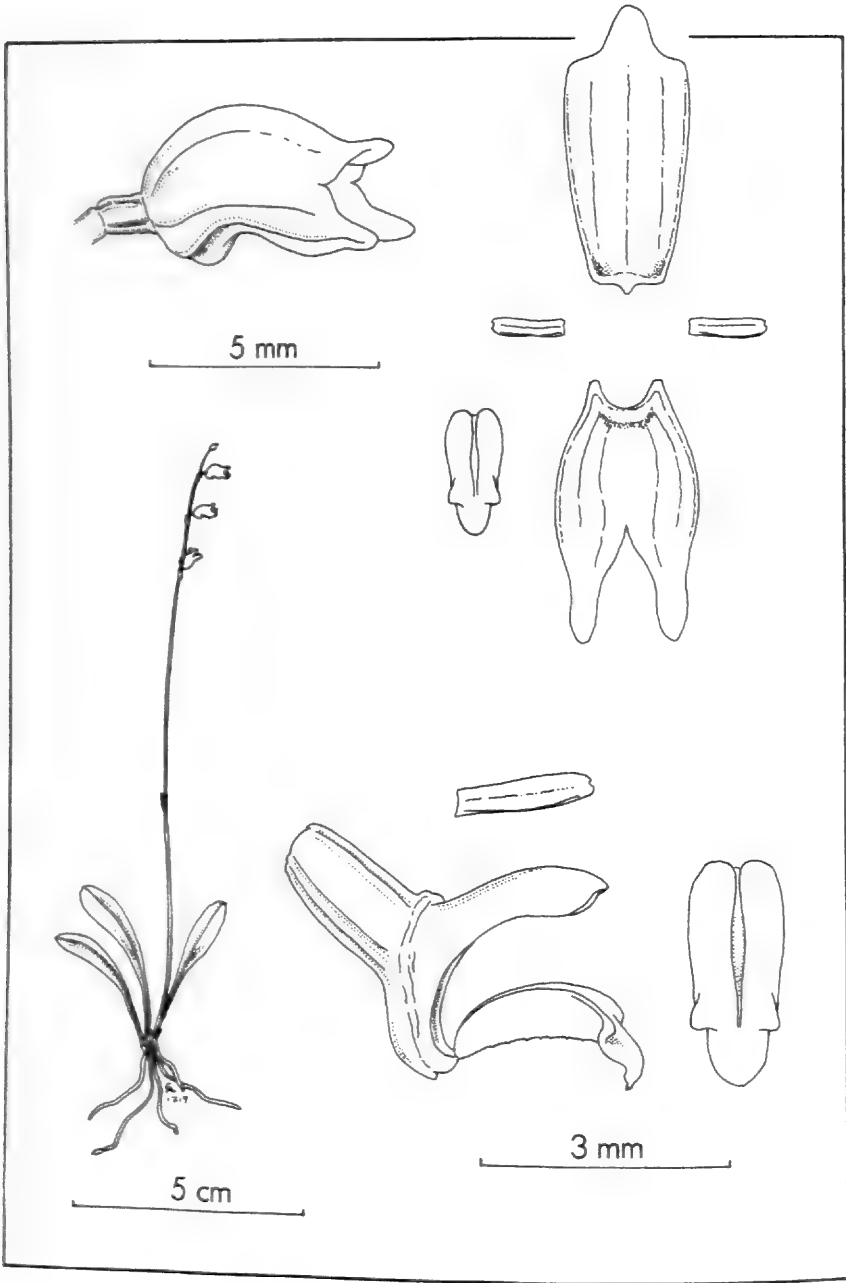


Plate 591. *Masdevallia microsiphon*

Masdevallia ova-avis Luer, *Phytologia* 39: 217, 1978.

Ety.: From the Latin *ova avis*, "eggs of a bird," in allusion to the appearance of the crowded inflorescence of speckled, ovoid flowers.

Plant medium to large in size, epiphytic to terrestrial, caespitose; roots slender. **Ramicauls** erect, 3-5 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, petiolate, 15-21 cm long including the petiole 4-8 cm long, the blade elliptical, subacute, 3-4.5 cm wide, the base cuneate into the slender, sulcate petiole. **Inflorescence** a horizontal, congested, distichous, simultaneously 6- to 9-flowered raceme 2-3 cm long, borne by an erect to suberect, slender peduncle 15-23 cm long, with 2 short bracts, from low on the ramicaul; floral bract cucullate, 5 mm long; pedicel 2.5 mm long; ovary 2.5 mm long, with undulate wings; **dorsal sepal** shiny dull purplish gray, speckled with purple-brown externally, dull white with dark purple spots within, ovoid, deeply concave, 14 mm long, 10 mm wide, connate to the lateral sepals for 6 mm to form a broad, gaping cup, the rounded apex abruptly contracted into a slender, decurved, orange tail 7-16 mm long; **lateral sepals** light purplish, intensely dotted with dark purple, with a central, yellow stripe, oblong, 11 mm long, 5 mm wide, connate basally to form a mentum beneath the column-foot, the subacute apex contracted into a slender, decurved, orange tail 7-15 mm long; **petals** dull white, dotted with purple, elliptical-oblong with serrulate margins, 5 mm long, 2.25 mm wide, the apex tridentate-truncate, long-apiculate, the labellar margin with a longitudinal carina; **lip** orange-brown, diffusely dotted with purple, oblong-subpandurate, 5 mm long, 2.5 mm wide, with marginal folds above the middle, lightly sulcate centrally, rounded at the apex, oblong below the middle, the base truncate, hinged below to the column-foot; **column** greenish white with purple flecks, semiterete, 4 mm long, with a foot 3 mm long and a short, incurved extension.

ECUADOR: Pichincha: terrestrial and epiphytic along the new road between Quito and Santo Domingo, alt. 2000 m, 1974, collected by B. Malo, cultivated at Tarqui near Cuenca, 20 July 1977, *C. Luer* 1753 (Holotype: SEL); west of Lloa along Río Cinto, alt. 2200 m, 20 Feb. 1992, *S. Dalström* 1509 (MO). **Bolívar:** between Chimbo and Babahoyo, alt. 2600 m, Jan. 1994, *A. Hirtz* 6020 (MO); west of Salinas toward La Palma, alt. 2000 m, 10 Mar. 1991, *C. Luer*, *J. Luer*, *A. Hirtz et al.* 14967 (MO). **Chimborazo:** Las Cochas, alt. 8,000 ft., 22 Nov. 1944, *I.L. Wiggins* 11127 (AMES).

This robust species is endemic to the western slopes of the Andes of central Ecuador where it grows sympatrically with the closely allied *M. tridens*. From the yellow-flowered *M. tridens*, *M. ova-avis* is distinguished by larger, gray-blue sepals, suffused, dotted and mottled with purple. Flowering simultaneously, the flowers, with a suborbicular dorsal sepal, are arranged in a short, crowded, circular raceme on a horizontal plane surrounded by a diverging array of yellow sepaline tails. The crowded raceme suggests a clutch of bird eggs.

Masdevallia ova-avis may be merely a variation of *M. tridens*, because variations approaching the latter have been seen. There are no specific differences in the long-apiculate, serrulate petals and channeled lips. *Masdevallia ova-avis* may also be synonymous with the long-lost *M. densiflora*, but the latter is distinguished by narrow leaves, smaller flowers and broadly long-apiculate petals.



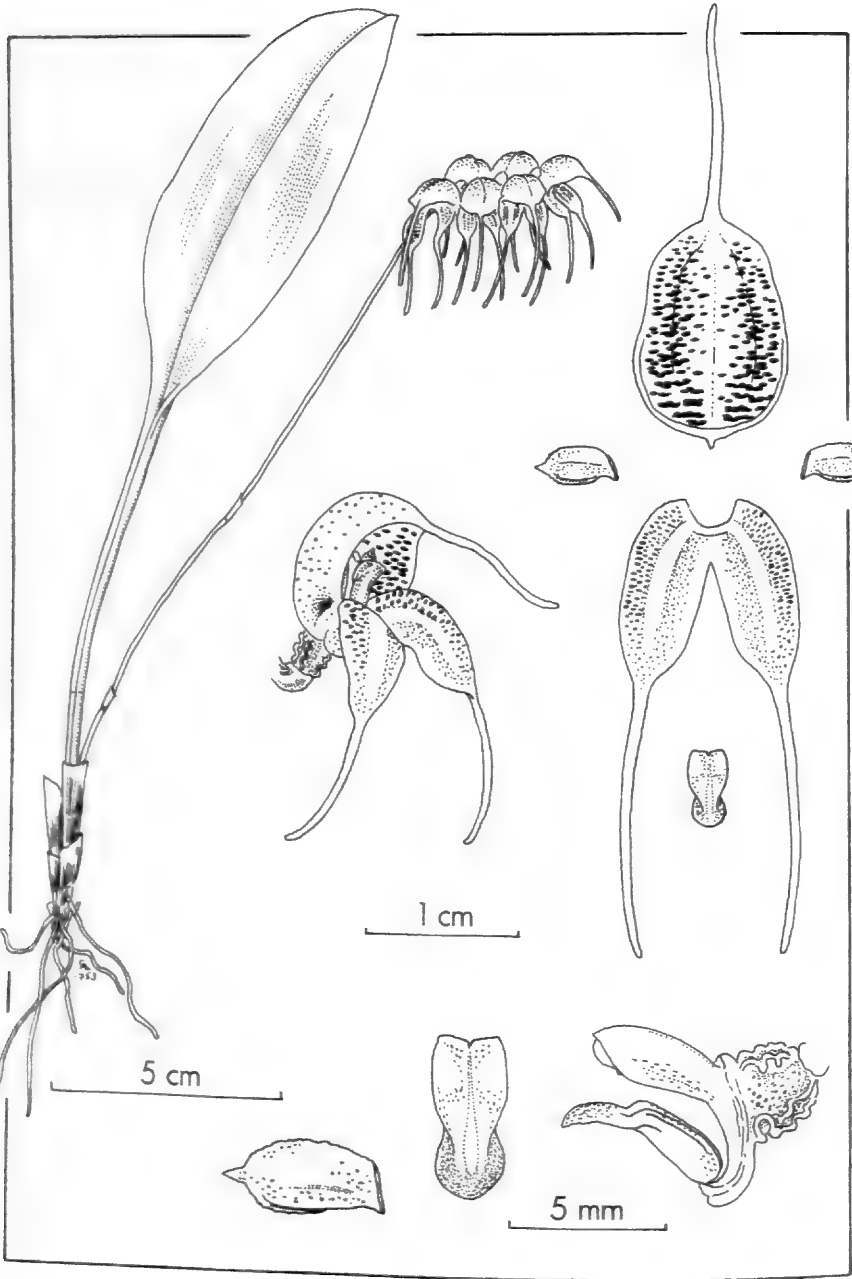


Plate 592. *Masdevallia ova-avis*

Masdevallia pachyura Rchb.f., Gard. Chron. n.s. 2: 322, 1874.

Ety.: From the Greek *pachys*, "thick," and *ura*, "tail," referring to the thick tails.

Syn.: *Masdevallia polysticta* var. *crassicaudata* Rchb.f., Gard. Chron. n.s. 15: 179, 1881.

Ety.: From the Latin *crassicaudatus*, "with thick tails," referring to the thick tails.

Syn.: *Masdevallia aureodactyla* Luer, Selbyana 7: 102, 1982.

Ety.: From the Latin *aureodactylus*, "a golden finger," referring to the sepaline tails.

Plant medium in size, epiphytic, caespitose to shortly repent; roots coarse. Ramicauls stout, erect, 1.5-4 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, 6-13 cm long including a 2-4 cm long petiole, blade elliptical, obtuse, 1.2-2.5 cm wide, gradually narrowed below into the petiole. **Inflorescence** an erect, loosely 3- to 8-flowered raceme 8-20 cm long including the peduncle, with 1-2 bracts below the middle, from low on the ramicaul; floral bract inflated, 5-9 mm long, 5 mm wide, enclosing the pedicel 3 mm long; ovary 2-3 mm long, with 3 pairs of undulating crests; **sepals** yellowish to white with purple to purple-brown spots, the dorsal sepal suborbicular, concave, carinate, 11-15 mm long, 10-11 mm wide expanded, connate 4-5 mm to the lateral sepals to form a shallow, gaping cup, the rounded apex contracted into a thickened, terete, sometimes clavate, yellow to orange tail, 5-7 mm long, 1-1.5 mm thick, the lateral sepals shortly pubescent within, oblong, 10-11 mm long, 3-4 mm wide, connate 1.5-2 mm to form a rounded mentum below the column-foot, the subacute apices contracted into tails similar to that of the dorsal sepal; **petals** white, oblong, 6 mm long, 2 mm wide, the margins minutely denticulate above the middle, the truncate apex long-apiculate, the labellar half with a low, longitudinal callus and a similar but lesser callus along the opposite half; **lip** light brown, dotted with brown, oblong-subpandurate, 6 mm long, 2.5 mm wide, with obtuse marginal folds above the middle, the epichile rounded, the truncate hypochile shallowly sulcate; **column** white with purple margins, semiterete, 5 mm long, the foot 4 mm long with a short, incurved extension.

ECUADOR: Without locality, *B. Roehl* 5 (Holotype: W). **Bolívar**: near La Palma between Guayaquil and Guaranda, alt. 2000-2500 m, 23 Dec. 1879, *F.C. Lehmann* 407 (G, W); Travesia de Amboca, alt. 1600-2000 m, *F.C. Lehmann* 7009 (K); epiphytic in cloud forest between Guaranda and Balzapamba, alt. ca. 2600 m, Aug. 1978, *C. Luer*, *J. Luer*, *A. Hirtz* & *A. Andreetta*, cultivated by *A. Andreetta* in Cuenca, 11 Feb. 1979, *C. Luer* 3971 (SEL); terrestrial on the road embankment west of Guaranda, alt. 2800 m, 10 Mar. 1982, *C. Luer* & *S. Dalström* 7262 (holotype of *M. aureodactyla*: SEL); west of Guaranda, alt. 2600 m, 12 Feb. 1990, *S. Dalström* & *L. Årnby* 1332, 1333, 1336 (MO); between Babahoyo and Guaranda, alt. 1650 m, 16 Feb. 1991, *C.H. Dodson*, *M. Whitten* & *A. Embree* 18685 (MO, QCNE); between Chillanes and San José del Tambo, alt. 2500 m, 17 Feb. 1991, *C.H. Dodson et al.* 18703 (MO, QCNE); between Chimbo and Chillanes, alt. 2240 m, collected Feb. 1991, flowered in cultivation Jan. 1994, *F.L. Stevenson* 93-0421-3 (MO); between Chillanes and San Vicente, alt. 2100 m, flowered in cultivation May 1992, *F.L. Stevenson* 92-0223-2 (MO). **Azuay**: western slopes of Azuay, Yunguilla, alt. 1900 m, 1973, collected by *B. Malo*, cultivated at Tarqui, 19 July 1977, *C. Luer* 1751 (SEL); same area, cultivated at Tarqui, 27 Sept. 1980, *C. Luer* 5586 (SEL).



This species, apparently limited in distribution to southwestern Ecuador, is closely allied to the more frequent and more widely distributed *M. leptoura*. Where both species grow together they maintain their identity. Vegetatively indistinguishable, the flowers are also similar but readily recognizable. The sepaline tails of *M. leptoura* are slender, while the tails of *M. pachyura* are thickened, more or less clavate, and usually bright orange in color. Extreme forms of the latter had been segregated into *M. aureodactyla*.

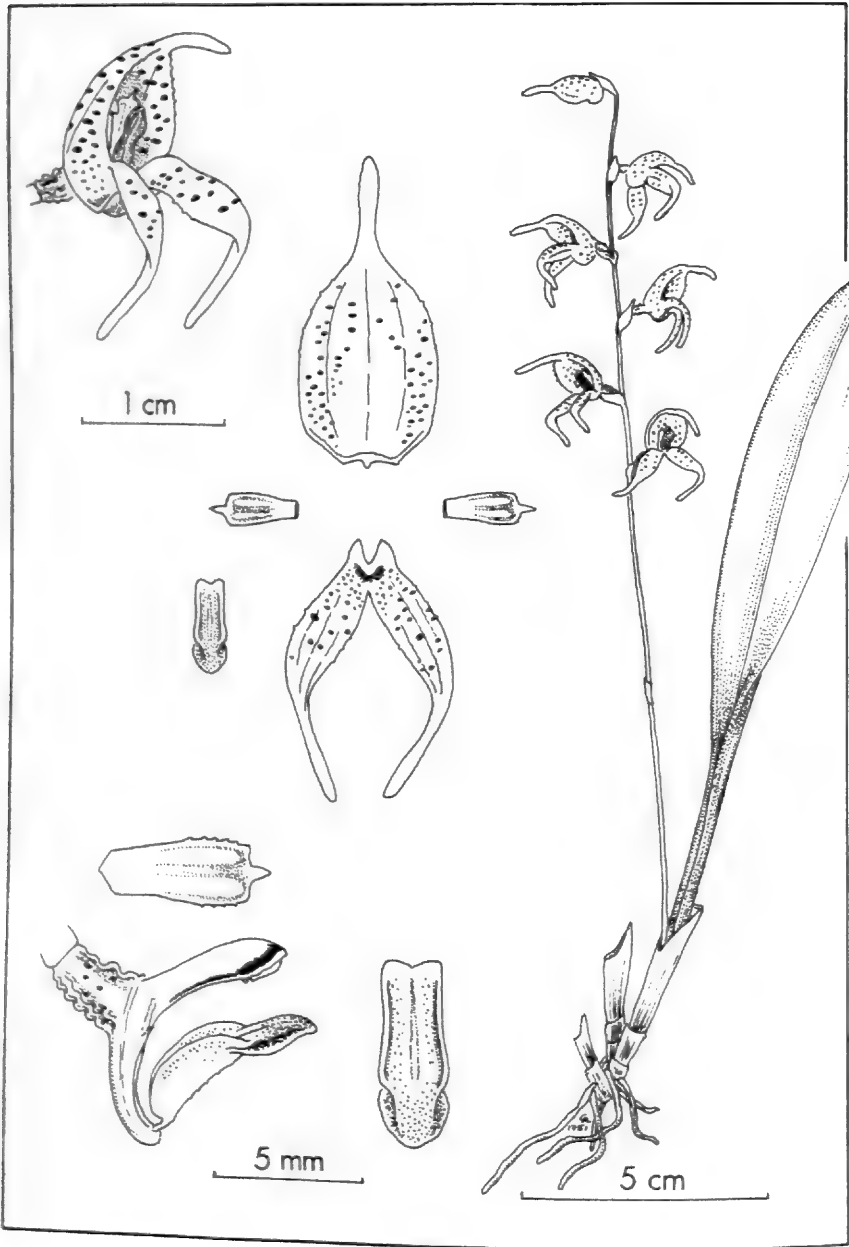


Plate 593. *Masdevallia pachyura*

Masdevallia polysticta Rchb.f., Gard. Chron. n.s. 1: 338, 1874; et 2: 290. 1875.

Ety.: From the Greek *polystictos*, "with many dots," referring to the appearance of the flowers.

Syn.: *Masdevallia spathulifolia* Kraenzl., Bull. Misc. Inform. 98, 1925.

Ety.: From the Latin *spathulifolius*, "with spatulate leaves," referring to morphology of the leaves.

Syn.: *Masdevallia polysticta* subsp. *spathulifolia* (Kraenzl.) Luer, Lindleyana 3: 50, 1988.

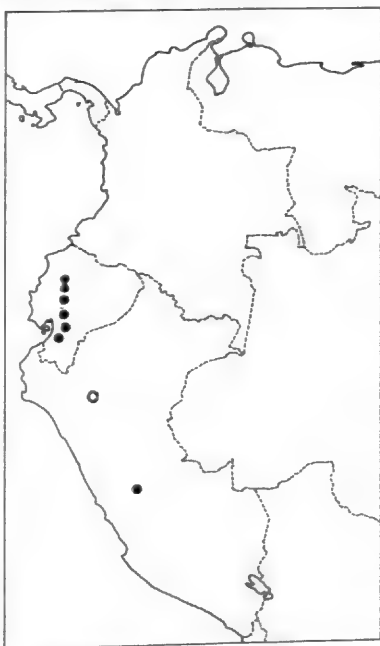
Syn.: *Masdevallia huebschiana* Kraenzl., Repert. Spec. Nov. Regni Veg. 17: 411, 1921.

Ety.: Named for Herr Hübsch who was reported to have collected this species.

Plant medium in size to large, epiphytic to terrestrial, ascending-caespitose; roots coarse. Ramicauls stout, ascending to erect, 2-4.5 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, 8-15 cm long including the petiole 2.5-6 cm long, the blade elliptical, obtuse, 2-3.5 cm wide, cuneate below into the slender petiole. **Inflorescence** an erect, loose to subcongested, distichous, nearly simultaneously several-flowered raceme, 15-30 cm tall including the slender peduncle, with 2 tubular bracts below the middle, from low on the ramicaul; floral bracts inflated, 5-6 mm long, enclosing the pedicel and part of the ovary; pedicel 2-3 mm long; ovary 2-3 mm long, undulate-winged; **sepals** white, to white variously spotted or dotted with purple, glabrous externally, glabrous to sparsely long-pubescent within, the margins minutely erose, the dorsal sepal suborbicular, concave, 10-14 mm long, 8-12 mm wide, connate to the lateral sepals for 2 mm to form a shallow, subglobose, sepaline cup, the rounded apex abruptly contracted into a slender tail 18-25 mm long, the lateral sepals oblong, oblique, 10 mm long, 2-3.5 mm wide, connate 2 mm beneath the column-foot, the obtuse apices contracted into slender tails ca. 20 mm long; **petals** white with purple spots, elliptical-oblong, 4-6 mm long, 1.5-2 mm wide, the margins serrate, the apex acute to truncate, with an acute apiculum, the two sides longitudinally carinate, that of the labellar half more prominent; **lip** yellow-orange to yellow-green, dotted with purple, oblong-subpandurate, 5-6 mm long, 1.5-3 mm wide, divided above the middle by marginal folds, the epichile oblong with the apex rounded, the hypochile oblong, the truncate base hinged beneath; **column** white with purple margins, semiterete, 4-5 mm long, the foot stout, 3-4 mm long, with a short extension.

PERU: northern Peru, without locality, *B. Roez* 4 (Holotype: W; clonotype via Ortgies: K); cultivated by *Wm. Bull* 236 (W). **Junín:** west of San Ramón, alt. 2100 m, 24 July 1991, *J. Schoonen, P. Cloes & M. Arias* 9405 (MO).

ECUADOR: **Pichincha:** western slopes of Mt. Corazón, alt. 2000-2500 m, *F.C. Lehmann* 7017 (lectotype of *M. spathulifolia*: K; isolectotype: G, K); epiphytic and terrestrial in dense, humid forests near Milligalle on the western slopes of Mt. Corazón, alt. 2000 m, 14 Jan. 1881, *F.C. Lehmann* 227 (paratypes of *M. spathulifolia*: G, W); below San Juan, alt. 2500 m, 31 Dec. 1955, *E. Asplund* 18975 (S); between Santo Domingo and Tandapi, alt. 2000 m, 7 May 1968, *G. Harling, G. Storm & B. Ström* 9350 (AMES, GB); between Chiriboga and Santo Domingo, alt. ca. 2000 m, 12 Mar. 1976, *C. Luer, J. Luer & P. Taylor* 857 (SEL); forest above Tandapi, alt. 2500 m, 31 Mar. 1985, *C. Luer, J. Luer & A. Hirtz* 11014 (MO); between Quito and Santo Domingo, alt. 1500 m, collected by *A. Andreetta & A. Hirtz*, cultivated at Paute, 16 May 1988, *C. Luer* 13396 (MO); **Cotopaxi:** near Pilaló between Quevedo and Latacunga, alt. 2400 m, 14 Feb. 1963, *C.H. Dodson & L.B. Thien* 2247 (MO, SEL); same area, 8 Apr. 1973, *L. Holm-Nielsen, S. Jeppesen, B. Løjnant & B. Øllgaard* 3211, 3212 and 3213 (AAU, AMES, MO, SEL); Pilaló, 16 Mar. 1976, *C. Luer, J. Luer & P. Taylor* 867 (SEL). **Bolívar:** near Tamboloma and La



Palma near Guaranda, alt. 1900-2500 m, 23 Dec. 1879, *F.C. Lehmann* 406 (G, W); between Salinas and Chaso, alt. 2000 m, Jan. 1994, *A. Hirtz* 6022 (MO); between Guaranda and Balzapamba, alt. 2400 m, Jan. 1995, *A. Hirtz* 6131 (MO); between Guaranda and Chillanes, alt. 2600 m, Jan. 1994, *A. Hirtz* 6021 (MO); between Guaranda and Caluma, 11 Mar. 1982, *C. Luer & S. Dalström* 7261 (SEL); west of Guaranda toward Puebloviejo, alt. 2600 m, 26 Mar. 1984, *C. Luer, S. Dalström, T. Höjjer, J. Kuijt & A. Hirtz* 9750, 9751, 9752, 9753 (MO). **Loja:** Cisne, alt. 8,000 ft., 1884, *Hübsch s.n.* (holotype of *M. huebschiana*: W); between Celica and Zapotillo, alt. 2100-2200 m, 23 Feb. 1985, *G. Harling & L. Andersson* 22449 (GB). **Azuay:** Valle de Yungilla, alt. 1800 m, collected by *A. Andreetta & M. Portilla*, cultivated at Paute, 24 May 1988, *C. Luer* 13664 (MO); Chaucha, south of Molleturo, alt. 2200 m, Jan. 1995, *A. Hirtz* 6144 (MO).

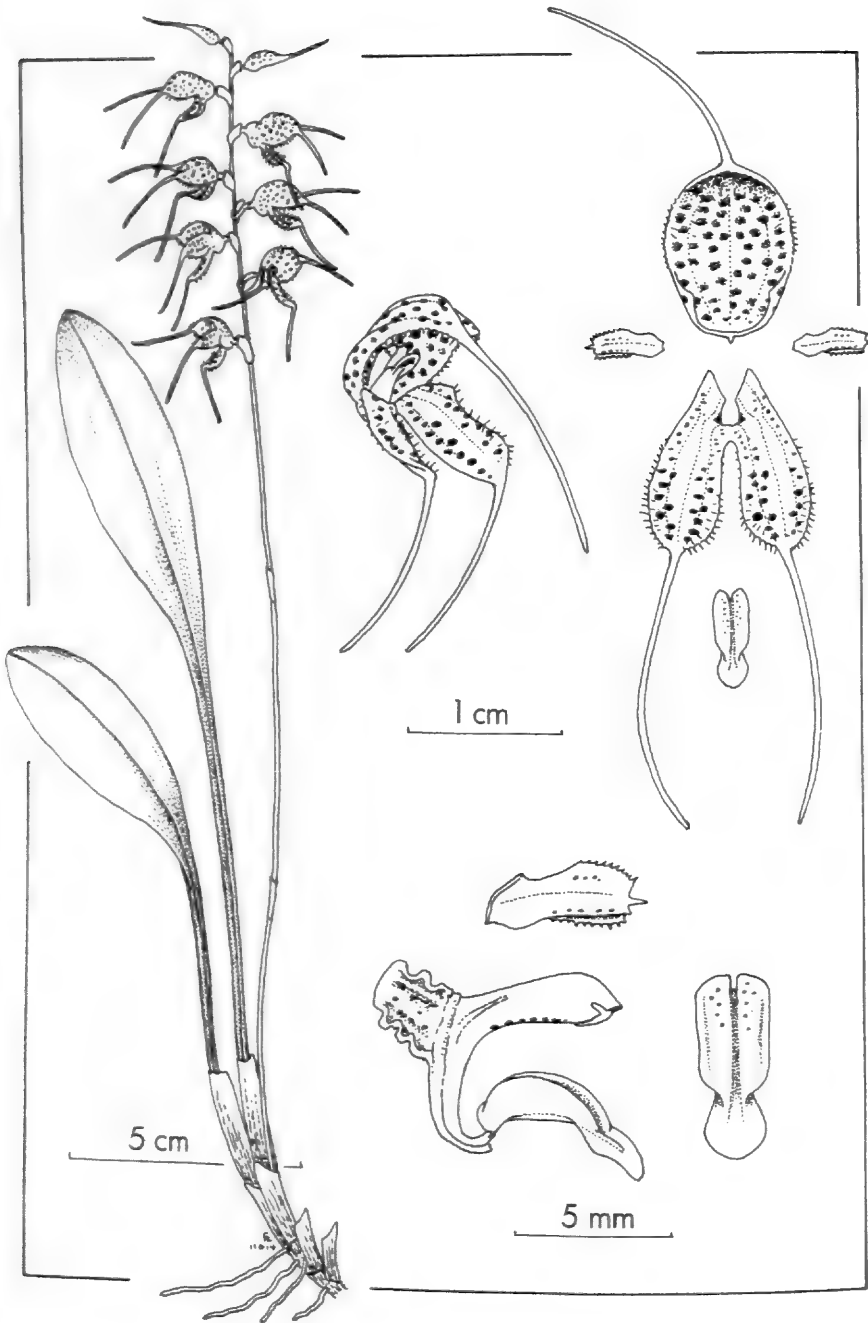


Plate 594. *Masdevallia polysticta*

This species is variable, relatively frequent, and widely distributed on the western slopes of the Andes of western Ecuador and adjacent northern Peru, where it was first collected by Benedict Roezl. A nineteenth century painting by F.C. Lehmann, t. 523, herb. 7017, labeled "M. tridens," is deposited at Kew.

Florence Woolward was aware of the great variability of this species, declaring that no two plants were exactly alike. Collections of variations from a single roadside population in west-central Ecuador were once identified as three species. Variations with florally congested racemes grade into *M. tridens*. A long-petiolate specimen was described as *M. spathulifolia*. *Masdevallia pulcherrima* is little more than a variation with large purple spots on the sepals; *M. caloptera* is little more than a variation with the pigment in lines along the major veins of the sepals; *M. lehmannii* is little more than a variation with yellow flowers on a longer raceme; *M. pozoi* is little more than a glabrous variation with larger, yellow flowers; *M. segrex* is little more than a very small-flowered variation.

Typically, the leaves are petiolate, and equaled or surpassed by the erect raceme. The raceme often bears the flowers in more or less crowded, opposite ranks, but just as often the raceme is distantly flowered.

The flowers are large for the subgenus. The sepals are white, usually with purple spots, either a few to many. The lateral sepals are commonly yellowish down the center. Most often the sepals are sparsely long-pubescent internally, but sometimes the hairs are almost copious, and sometimes hairs are entirely absent. The sepals are connate basally into a shallow cup. The rounded, concave, dorsal sepal is much broader than the oblong laterals. The tails are slender, usually yellowish, and longer than the blades. On at least one clone, the tails are four centimeters long or longer. The petals are serrate and apiculate, as seen in most larger-flowered species of the subgenus. As in many other species, the lip is divided by marginal folds into an epichile with a rounded, convex apex, and an oblong, channelled hypochile.

Masdevallia huebschiana was described by Kränzlin from a dried, insect-riddled specimen in ruinous fragments received from his friend Zahlbruckner in Austria. The plant was supposed to have been sent originally from F. Sander in St. Albans, England. The information that it had been collected near Ocaña in the Eastern Cordillera of Colombia by Hübsch is erroneous because Hübsch collected in southern Ecuador, not in Colombia. Flowers are inseparable from those of *M. polysticta*.

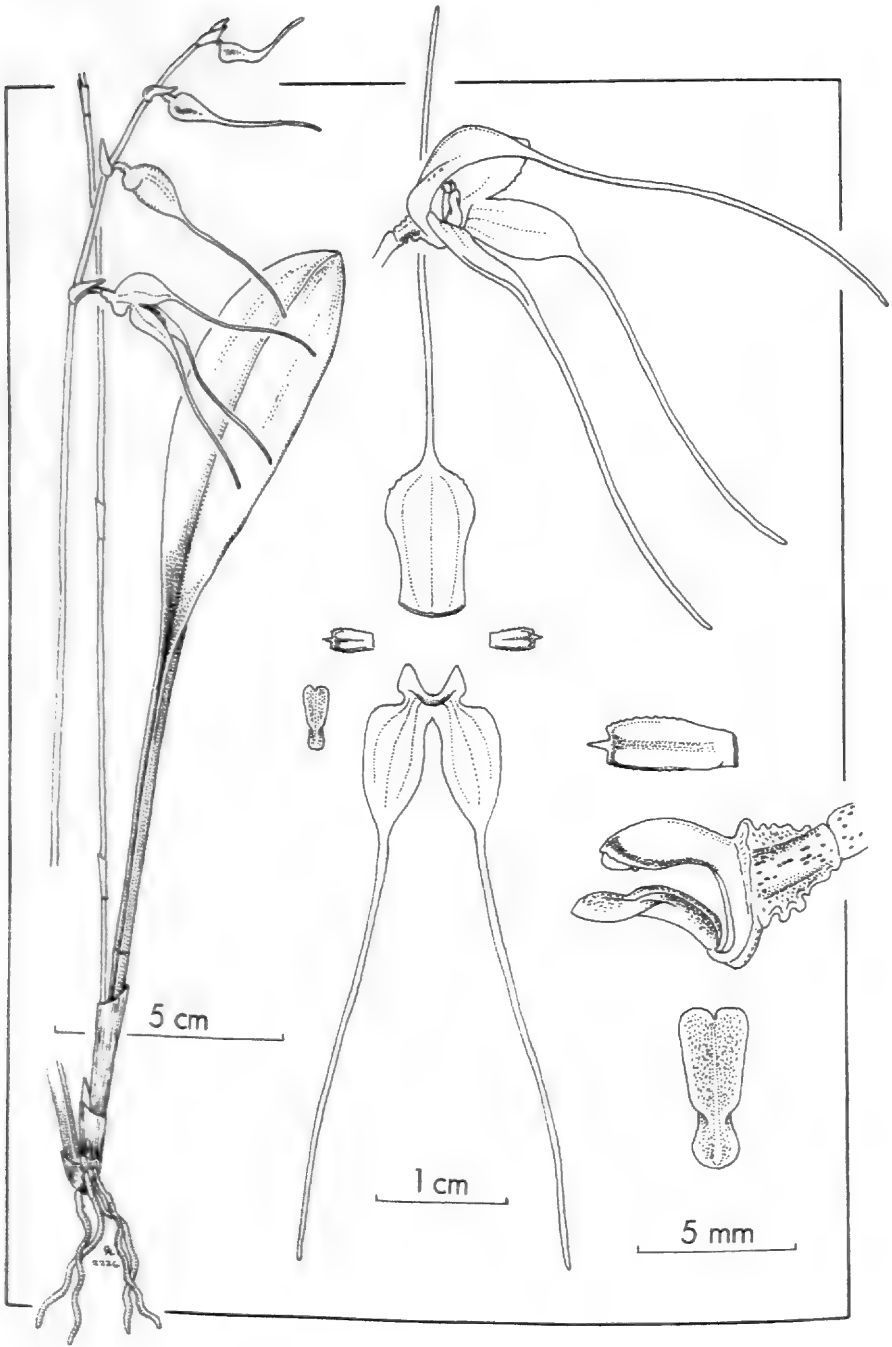


Plate 595. *Masdevallia polysticta*
(*Masdevallia spathulifolia*)

Masdevallia porphyrea Luer, *Phytologia* 47: 65, 1980.

Ety.: From the Latin *porphyreus*, "purple," referring to the purplish leaves and flowers.

Plant medium in size, epiphytic, densely caespitose to shortly ascending; roots slender. **Ramicauls** slender, erect, 2-3.5 cm long, mottled with rose, with 2-3 close, tubular sheaths at the base. **Leaf** erect, coriaceous, dull pinkish tan, suffused and mottled with purple, long-petiolate, 7-13 cm long including the slender, red-spotted petiole 3-4.5 cm long, the blade narrowly elliptical, subacute, 1.5-2.2 cm wide, the base narrowly cuneate into the petiole. **Inflorescence** a raceme 3-7 cm long of 4-6 simultaneous flowers, the peduncle erect, slender, 14-20 cm long including the rachis, with a bract near the middle and another near the base, from low on the ramicaul; floral bract inflated, oblique, 4-5 mm long; pedicel green, spotted with purple, 2-3 mm long; ovary green, spotted with purple, 2 mm long, with 3 double crests; **sepals** glabrous, light dull green, with minute, transverse bars of purple, with minutely serrulate margins, the dorsal sepal suborbicular, deeply concave, more or less saccate below the middle, 8 mm long, 9 mm wide, connate to the lateral sepals for 5 mm to form a gaping, more or less transversely compressed sepaline cup, the rounded apex abruptly contracted into an erect, green tail 7 mm long, the lateral sepals ovate, 9 mm long, 5 mm wide, connate 2 mm over a transverse fold in front of the column-foot, the acute apices contracted into tails similar to that of the dorsal sepal; **petals** translucent green, marked with purple, oblong, 1.75 mm long, 0.75 mm wide, the apex retuse, slightly thickened toward the base on the labellar half; **lip** light purple-brown, broadly ovate-trilobed, 3.75 mm long, 3.5 mm wide across the lateral lobes, 2.5 mm wide across the middle lobes, the lateral lobes erect, oblique, broadly ovate, obtuse, the middle lobe with 3 elevated veins, obtuse to rounded, with undulate margins, the disc with a pair of oblique lamellae near the middle, the broadly rounded base hinged to the column-foot; **column** dull green, mottled with red, semiterete with broad wings, 3.5 mm long, with a thick, spotted foot equally long.

ECUADOR: **Azuay**: epiphytic in Valle de Yunguilla, alt. 1900-2000m, collected by B. Malo, cultivated at Tarqui, 26 Sept. 1980, *C. Luer 5566* (Holotype: SEL); above Molleturo, alt. 2500 m, Jan. 1992, *S. Dalström 1506* (MO). **Bolivar**: epiphytic in cloud forest above Chillanes, alt. 2650 m, 25 Mar. 1984, *C. Luer, S. Dalström, T. Höijer, J. Kuijt & A. Hirtz 9718* (MO); between Chillanes and San José del Tambo, alt. 2500 m, 17 Feb. 1991, *C.H. Dodson et al. 18702* (MO); south of Chillanes, alt. 11 Mar. 1991, *C. Luer, J. Luer, A. Hirtz et al. 15000B* (MO).

This species is confined to the forested mountains of southwestern Ecuador where it is locally frequent. It is recognized by the red-purple suffusion of the vegetative parts and the diffuse, red-purple stippling of the short, subglobose, sepaline tube that seems somewhat dorsally compressed. The tails are about as long as the blades. The petals are entire and retuse, and the lip is broadly ovate-trilobed, with the lobes erect below the middle. Of all the species of the subgenus, the petals and lip probably differ greatest from all the others.



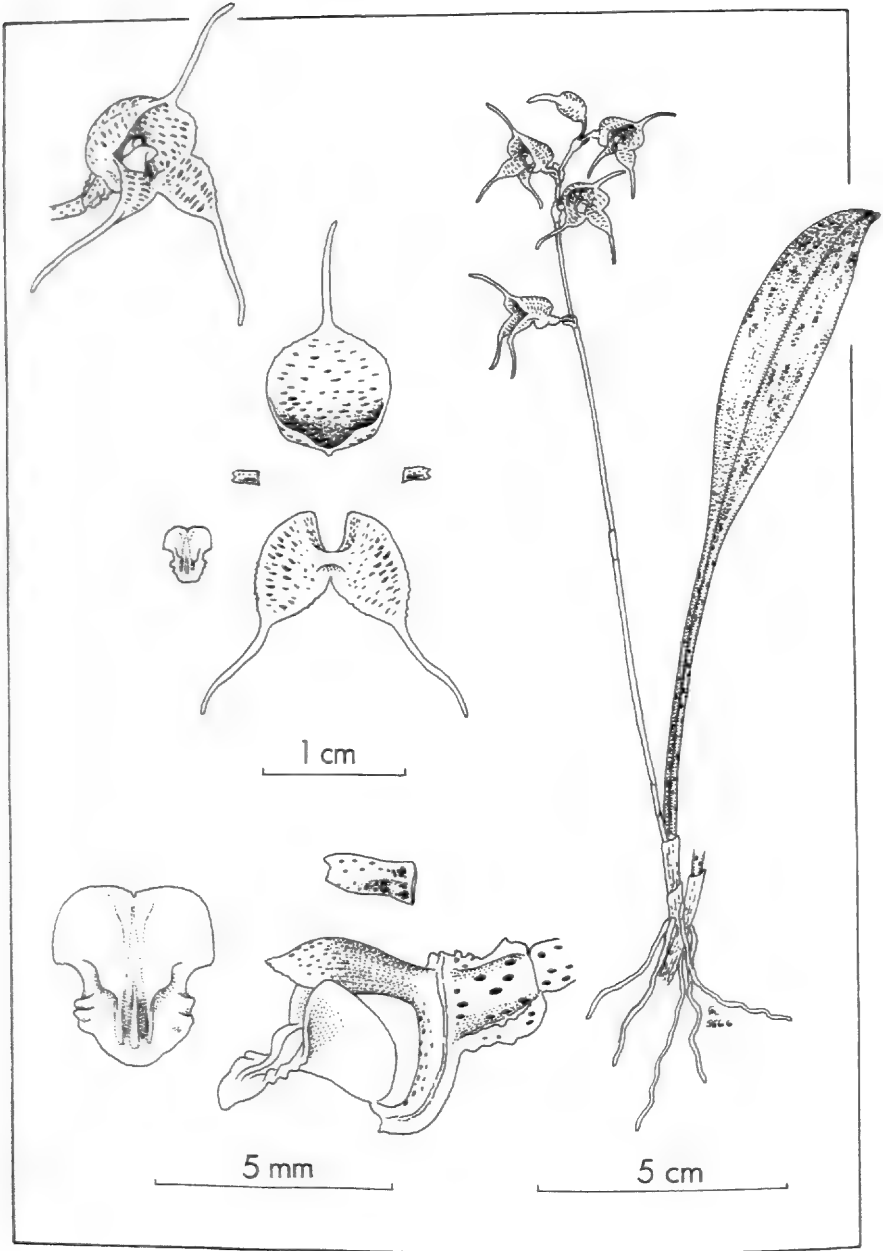


Plate 596. *Masdevallia porphyrea*

Masdevallia pozo Königler, *Die Orchidee* 44: 180, 1993.

Ety.: Named for Alfonso Pozo of Cuenca, Ecuador, who collected this species.

Plant medium in size to large, epiphytic, ascending-caespitose; roots slender. **Ramicauls** stout, ascending to erect, 2.5-4 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, 10-22 cm long including the petiole 4-5 cm long, the blade elliptical-obovate, obtuse, 2-3.5 cm wide, cuneate below into the slender petiole. **Inflorescence** an erect to suberect, congested to subcongested, subsuccund, simultaneously several-flowered raceme 1.5-7 cm long, sometimes horizontal, borne by a slender peduncle, 15-24 cm long, with two bracts below the middle, from low on the ramicaul; floral bracts inflated, 6 mm long, enclosing the pedicel and part of the ovary; pedicel 3-5 mm long; ovary 2 mm long, undulate-winged; **sepals** yellow, marked with more or less transverse bars of red or red-purple, glabrous, with minutely erose margins, the dorsal sepal broadly elliptical, concave, 11-14 mm long, 10-12 mm wide, connate to the lateral sepals for 3 mm to form a shallow, subglobose, sepaline cup, the rounded apex abruptly contracted into a slender, orange tail 20 mm long, the lateral sepals elliptical-oblong, oblique, 13-17 mm long, 4-5 mm wide, connate 1-2 mm beneath the column-foot, the subacute apices contracted into slender tails 20 mm long; **petals** yellow, dotted with purple, oblong, 4-5 mm long, 1.75-2 mm wide, the margins serrate above the middle, the apex truncate, with an acute apiculum, the two sides longitudinally callous, that of the labellar half more prominent; **lip** yellow, oblong-subpandurate, 5-6 mm long, 2-2.5 mm wide, divided above the middle by marginal folds, the epichile obovate with the apex rounded, wider than the hypochile, the hypochile oblong, channeled, the truncate base hinged beneath; **column** white, dotted with purple, semiterete, 4-5 mm long, the foot stout, 3-4 mm long, with a short, incurved extension.

ECUADOR: **Chimborazo**: between Pallatanga and Bucay, alt. 1600 m, collected by A. Pozo, 1978, cultivated in Munich, Germany, by W. Königler *WK-24* (Holotype: M; Isotypes: K, QCA, Herb. H. Königler), C. Luer illustr. 17791.

PERU: **Amazonas**: Pomacochas, alt. 2000 m, 1991, *P. Cloes 990201* (MO), C. Luer illustr. 19059.

This species is rare and local in southwestern Ecuador and northern Peru. It is closely related to the variable, frequent, and sympatric *M. polysticta*, from which it is distinguished by larger, yellow, glabrous flowers that are more crowded on the rachis. The distance between flowers varies from two to ten millimeters. The markings on the sepals are more or less short, transverse bars of red-purple or orange-brown. The slender, orange tails are much longer than the blades. The petals and lip are similar to those of *M. polysticta*, but the rounded epichile is broader than the hypochile.



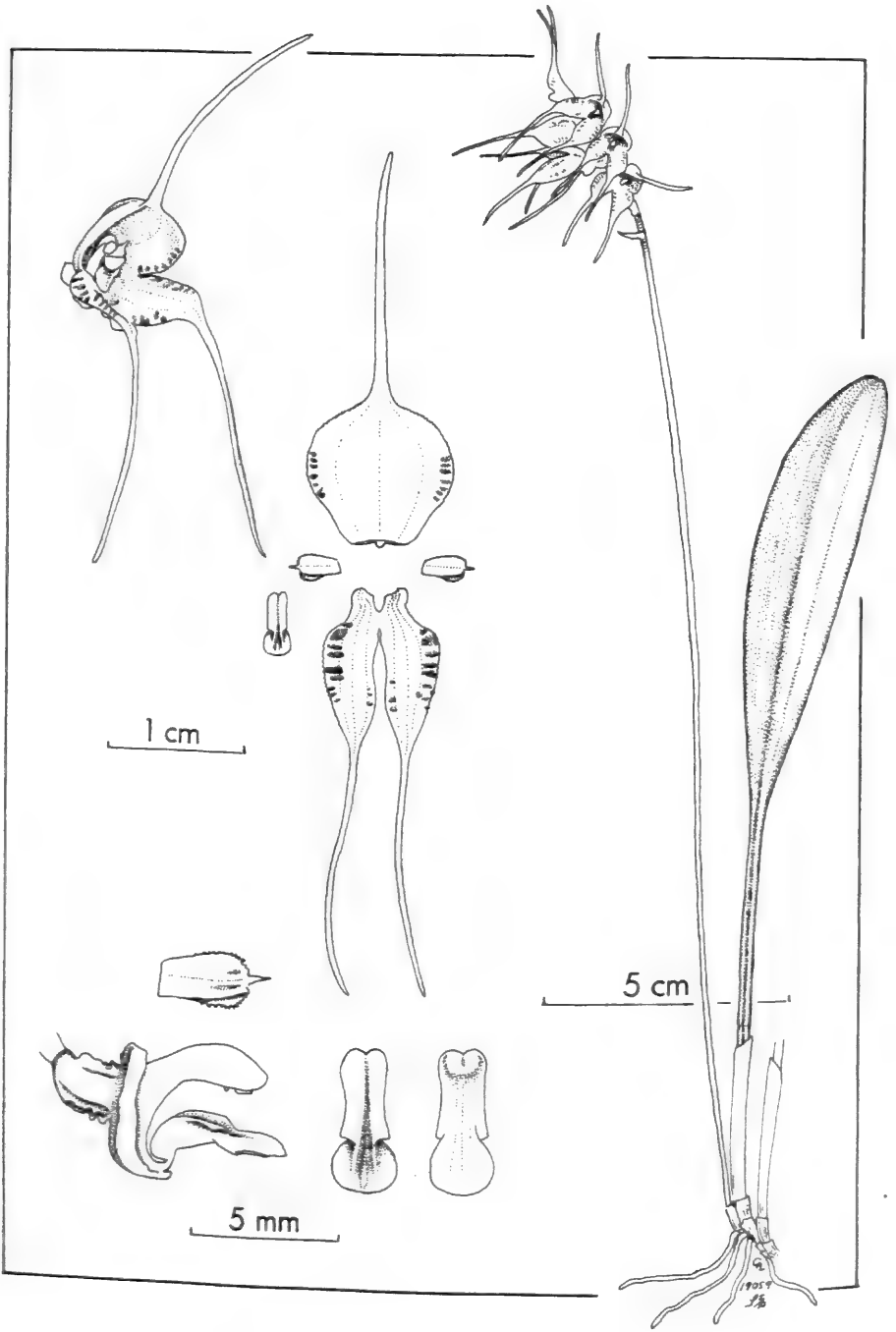


Plate 597. *Masdevallia pozoi*

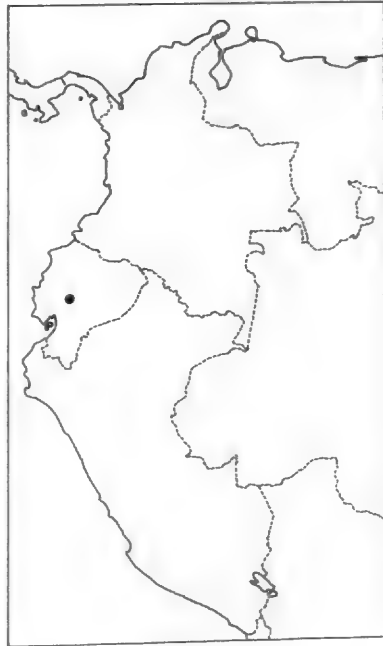
Masdevallia pulcherrima Luer & Andreetta, *Phytologia* 47: 66, 1980.

Ety.: From the Latin *pulcherrimus*, the superlative of *pulcher*, "pretty," referring to the beauty of the flowers.

Plant medium in size, epiphytic, caespitose to shortly ascending; roots slender. Ramicauls slender, 2-4 cm long, enclosed by 2-3 close, imbricating sheaths. **Leaf** erect, coriaceous, petiolate, 11-14 cm long including the 2.5-3 cm long petiole, the blade elliptical, subacute, 2.3-2.7 cm wide, narrowly cuneate below into the petiole. **Inflorescence** an arching, simultaneously several-flowered raceme 6-7 cm long, 12-17 cm long including the 8-10 cm long slender, erect to suberect peduncle, with bracts below the middle and near the base, from low on the ramicaul; floral bract thin, oblique, 3-5 mm long; pedicel 5-6 mm long; ovary green with purple dots, 3 mm long, irregularly crested; **sepals** white with a few large, irregular, purple spots and orange tails, glabrous, the free margins minutely ciliate, the dorsal sepal ovate, cucullate, 10 mm long, 9 mm wide unspread, connate 4 mm to the lateral sepals to form a gaping cup, the rounded apex abruptly contracted into an erect tail 12 mm long, the lateral sepals oblong, 10 mm long, 5 mm wide, connate ca. 1 mm to form a short mentum beneath the column-foot, the obtuse apices contracted into deflexed, 12 mm long tails; **petals** yellow-white, marked with purple, orange at the apex, oblong, 5 mm long, 2 mm wide, the margins minutely serrulate, with a carina from the base extending along and above the lower margin, the apex truncate with an acute, apical tooth; **lip** yellow-white, orange at the apex, oblong, 4.5 mm long, 2.75 mm wide, with broad, obtuse, marginal folds in the distal third, the apex convex, obtuse to rounded, the disc sulcate centrally, the truncate base hinged to the column-foot; **column** yellow-white, semiterete, 4.5 mm long, the foot equally long including a short, incurved extension.

ECUADOR: **Bolívar**: epiphytic in cloud forest below Guaranda, alt. ca. 2000 m, Aug. 1978, collected by A. Andreetta, A. Hirtz, J. Luer & C. Luer, cultivated in Cuenca by A. Andreetta, 26 Sept. 1980, *C. Luer* 5558 (Holotype: SEL); same collection, cultivated at Colomborquídeas in Colombia, 20 Apr. 1988, *C. Luer* 13288 (MO).

This easily recognized species is uncommon and apparently confined to one area of western Ecuador. It is closely related to *M. polysticta*, and probably could be considered a mere variation of the latter. *Masdevallia pulcherrima* is vegetatively similar to the other larger species of the subgenus. The distinctively colored flowers are large and loosely arranged in the raceme. The sepals are glabrous and snow white with rather large purple spots scattered over the basal halves. The dorsal sepal is deeply cucullate and the tails are slender. The petals and lip do not differ significantly from the usual pattern seen in the subgenus.



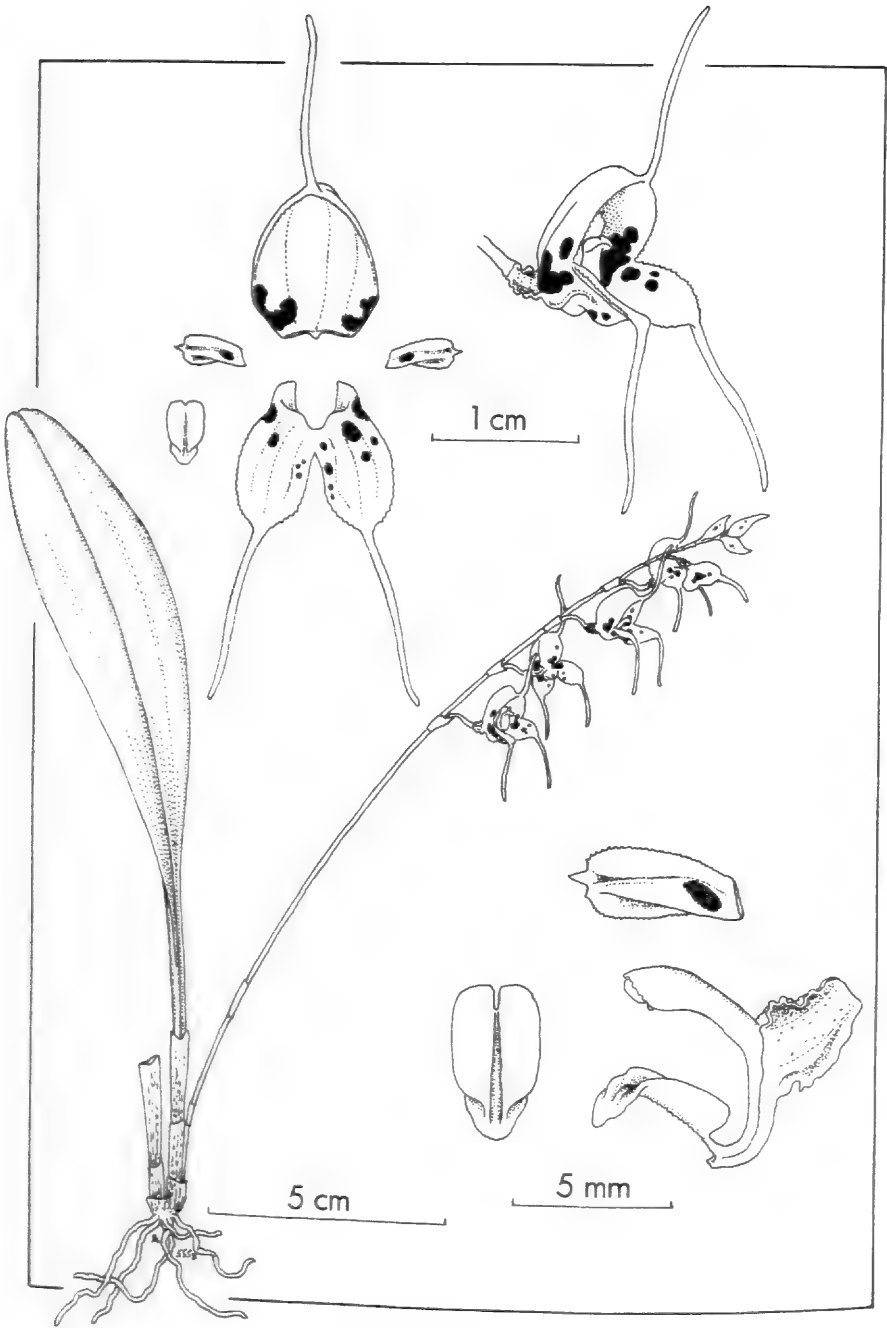


Plate 598. *Masdevallia pulcherrima*

Masdevallia rafaelliana Luer, Selbyana 5: 149, 1979.

Ety.: Named in honor of Dr. Rafael Lucas Rodríguez Caballero, renowned illustrator of the orchids of Central America.

Plant medium in size, epiphytic, shortly repent to caespitose; roots coarse. Ramicauls comparatively stout, suberect, 2-4 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, 11-18 cm long including the indistinct petiole 1-2 cm long, the blade narrowly elliptical-oblong, subacute to obtuse, 1.5-2.5 cm wide, gradually narrowed below the middle to the sulcate, subpetiolate base. **Inflorescence** a simultaneously few-flowered, lightly flexuous raceme of 3-8 showy flowers, 1.5-5 cm long, borne by a slender, suberect peduncle 12-20 cm long, with 2-3 distant bracts, from near the base of the ramicaul; floral bracts inflated, acute, 5 mm long; pedicel 3 mm long; ovary 2.5-4 mm long, with 6 undulating crests; **sepals** white to rose, dotted with red-purple, minutely crose, sparsely ciliate, the dorsal sepal broadly ovate, concave, 14 mm long, 10 mm wide expanded, connate to the lateral sepals for 2 mm to form a sepaline cup, the obtuse apex abruptly contracted into a tail 3.5 mm long, the lateral sepals, spreading, oblong, oblique, 13 mm long, 6 mm wide, connate 2 mm to form a rounded mentum beneath the column-foot, the subacute apices contracted into tails 4 mm long; **petals** yellow, oblong, slightly curved, 6 mm long, 2 mm wide, the apex truncate, apiculate, the labellar margin with a longitudinal carina forming an obtuse angle near the apex and above the base; **lip** purple, erect, oblong, 7 mm long, 3 mm wide, with irregular marginal folds above the middle, the disc shallowly sulcate longitudinally, the epichile suborbicular, obtuse, the hypochile oblong, with the base subtruncate, hinged beneath; **column** yellow-white, semiterete, 6 mm long, the foot equally long with an incurved extension 2 mm long.

COSTA RICA: **San José:** Cerro de la Muerte, epiphytic in wet cloud forest above División, alt. 2850 m, 21 July 1979, *K.S. Walter 79198* (Holotype: SEL; Isotype: CR); same area, 20 Sept. 1979, *C. Luer, J. Luer & K.S. Walter 4241* (SEL); same area, collected by A. Maduro, 16 Mar. 1986, *C. Luer 12150* (MO); near El Trinidad southeast of Empalme along interamerican highway, alt. 2600 m, 10 June 1969, *W. Burger 5951* (F); Cerro del Muerte, 20 Aug. 1950, *J. León 2703* (USJ); near División, alt. 2800 m, 5 Feb. 1979, *C. Todzia 560* (CR); Cordillera de Talamanca, Madre Selva, alt. 2800 m, 17 Apr. 1985, *D. Mora de Retana & P. Moiva 31* (B, USJ); Villa Mills, alt. 3000 m, May 1993, *D. Mora de Retana s.n.* (USJ). Without locality, 1950, *C.H. Lankester 1561* (AMES).

PANAMA: **Bocas del Torro:** southeast slope of Cerro Echandi, alt. 2600-2800 m, 1 Mar. 1984, *L. D. Gómez, I. Chacón, G. Davidse & G. Herrera 22225* (CR, MO).

Masdevallia rafaelliana, the only member of the subgenus in Central America, occurs locally in wet forests of central Costa Rica and adjacent Panama at

an altitude of nearly 3000 meters above sea level. Its existence had been known by the late Dr. Rafael Lucas Rodríguez of the University of Costa Rica for many years, a superb watercolor painting of the species having been made by him in 1978.

In the wild, the plants of *M. rafaelliana* are not robust. Most plants are loosely attached to the substrate and consist of only two or three leaves. Plants are occasionally detached and may be found dangling by their roots. The habitat is rapidly being destroyed as the trees are cut and burned for charcoal by local inhabitants. Unfortunately, this species is difficult to cultivate.

Masdevallia rafaelliana is characterized by a loosely few-flowered raceme. The sepals are rose-colored with a scattering of small spots. The tails are very short. The petals are entire with the apex minutely lobulate. The lip is divided by marginal folds into a rounded epichile and an oblong, channeled hypochile.



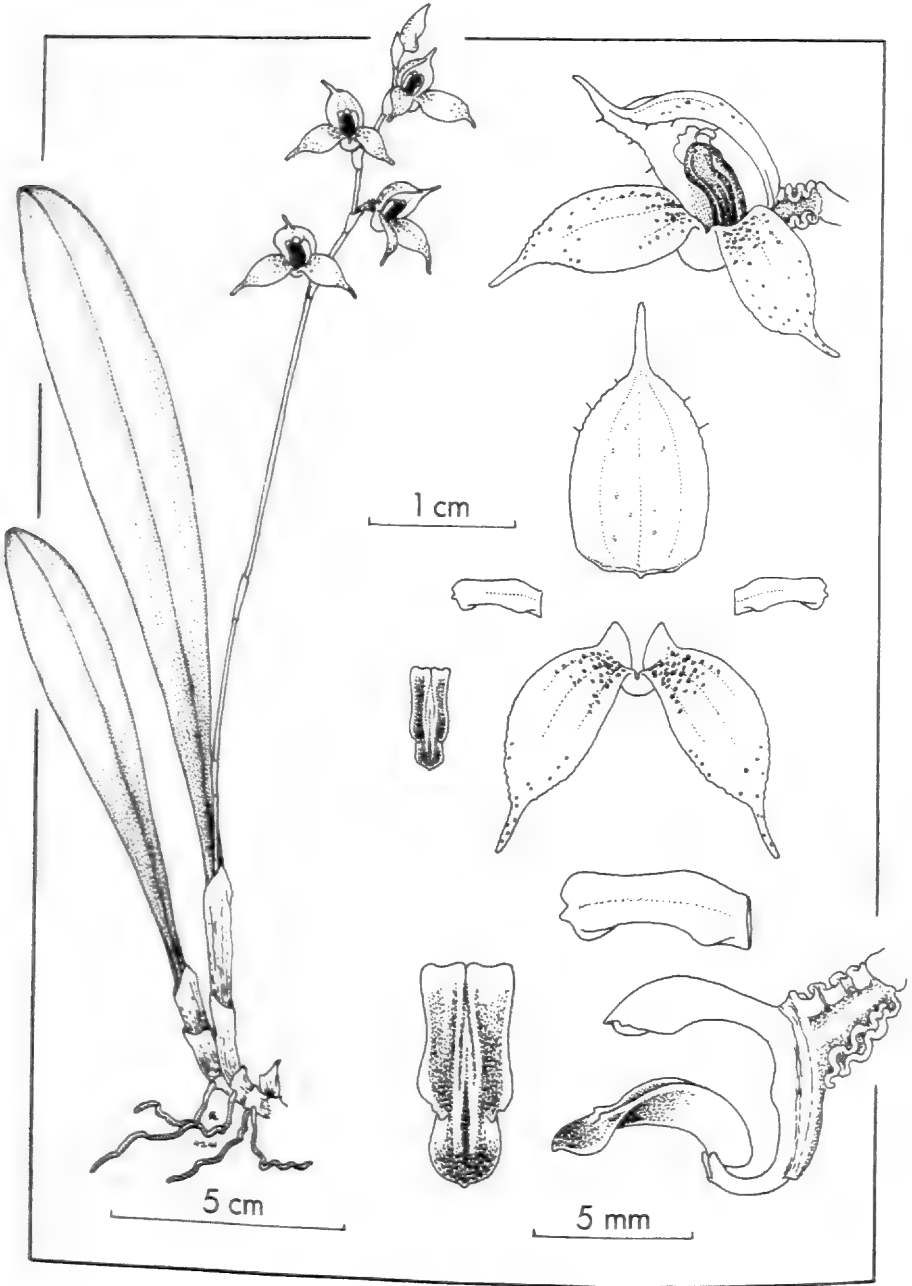


Plate 599. *Masdevallia rafaelliana*

Masdevallia segrex Luer & Hirtz, sp. nov.

Ety.: From the Latin *segreg*, "apart," referring to a separation from *Masdevallia polysticta* Rchb.f.

Species haec *M. polystictae* Rchb.f. affinis, sed floribus bis minoribus et sepalo dorsali ovato anguste obtuso differt.

Plant medium in size to large, epiphytic, ascending-caespitose; roots coarse. Ramicauls stout, ascending to erect, 3.5-4.5 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, 11-18 cm long including the petiole 4-6 cm long, the blade elliptical-obovate, obtuse, 2.5-3 cm wide, cuneate below into the petiole. **Inflorescence** a suberect, loose, strict, subsecund, nearly simultaneously several-flowered raceme of up to 9 flowers, up to 20 cm tall including the slender peduncle 9-12 cm long, with 2 tubular bracts, from low on the ramicaul; floral bracts inflated, 5-6 mm long, enclosing the pedicel and part of the ovary; pedicel 2 mm long; ovary 2 mm long, undulate-winged; **sepals** creamy white, spotted with purple-brown, glabrous externally, sparsely long-pubescent within, the dorsal sepal ovate, concave, 7 mm long, 6 mm wide, connate to the lateral sepals for 2 mm to form a shallow, subglobose, sepaline cup, the subacute apex abruptly contracted into a slender, yellow tail 10 mm long, the lateral sepals oblong, oblique, 7 mm long, 2 mm wide, connate 1 mm beneath the column-foot, the obtuse apices contracted into slender tails 10 mm long; **petals** white with purple dots, elliptical, 4.5 mm long, 1.5 mm wide, the margins serrate, the apex obtuse, with a minute apiculum, with a longitudinal carina above the lower margin; **lip** light yellow, oblong-subpandurate, 4.5 mm long, 1.75 mm wide, divided above the middle by marginal folds, the epichile obovate with the apex rounded, the hypochile oblong, channeled, the base truncate, hinged beneath; **column** white with purple dots, semiterete, 4 mm long, the foot stout, 2 mm long, with a short extension.

ECUADOR: **Pichincha**: western slopes of Pichincha, cultivated in Quito, 30 Mar. 1984, by A. Hirtz s.n. (Holotype: MO), C. Luer illustr. 9808.

This species is little more than a small-flowered variation of the frequent and variable *M. polysticta*, and for nearly 20 years I had considered it as such. However, in constructing a key to the subgenus for this *Icones*, the discrepancy in size appeared too great to be discounted. Although the size of the flowers of *M. polysticta* is variable, the appearance and the small size of the flower of *M. segrex* is distant from the others.

Vegetatively similar to *M. polysticta* and other relatively large members of the subgenus, *M. segrex* is distinct with the loose, strict, subsecund raceme of proportionately small flowers. In addition to their twice smaller size, the dorsal sepal is ovate and subacute or narrowly obtuse, contrasting with the suborbicular, deeply concave dorsal sepal of *M. polysticta*.



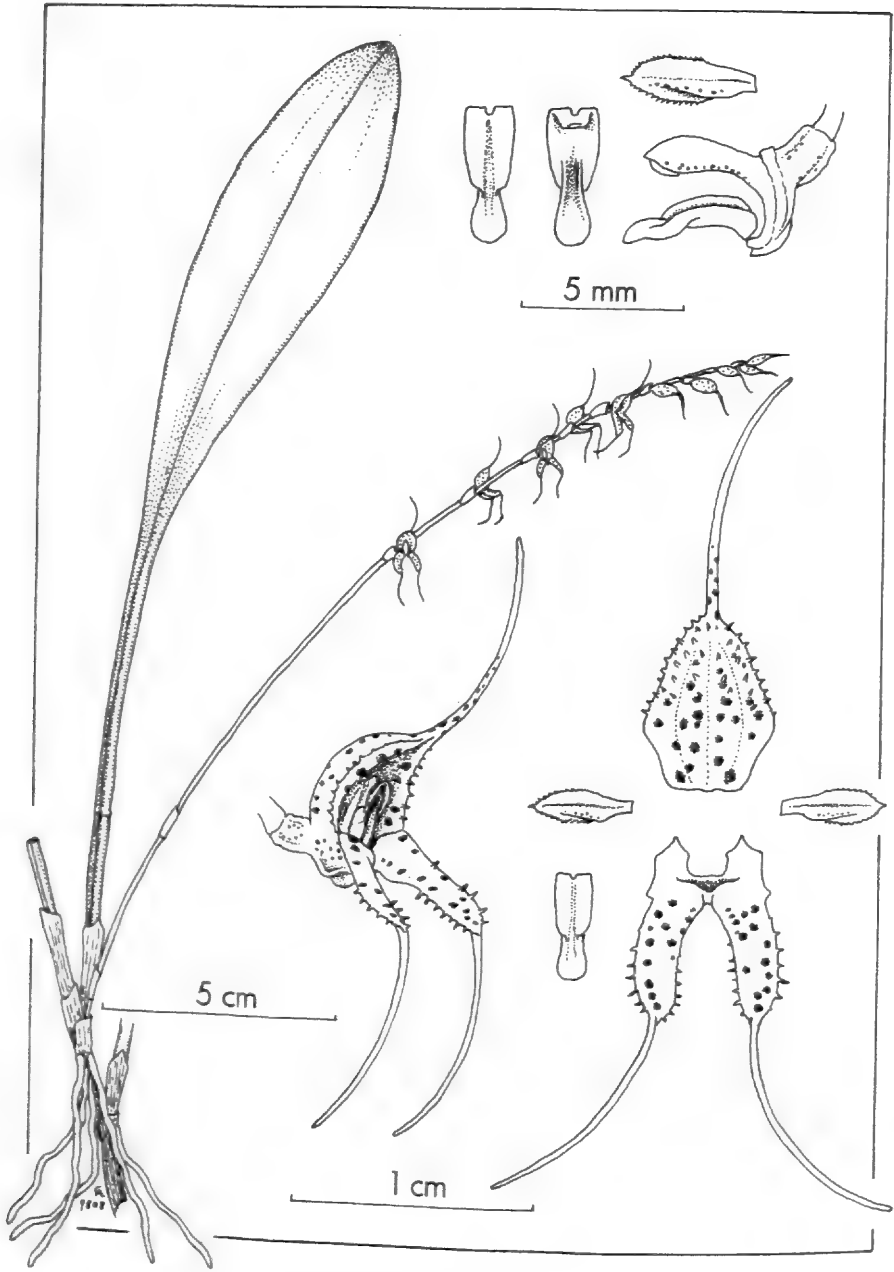


Plate 600. *Masdevallia segrex*

Masdevallia sertula Luer & Andreetta, *Novon* 1: 171, 1991.

Ety.: From the Latin *sertula*, "a little wreath or a crown," referring to the appearance of the inflorescence.

Plant medium in size, epiphytic, caespitose; roots coarse. Ramicauls rather stout, erect, 2-2.5 cm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, petiolate, 10-14 cm long including the 3-4 cm long petiole, the blade elliptical, obtuse, 1.5-2 cm wide, the base narrowly cuneate into the slender petiole. **Inflorescence** a congested, simultaneously several-flowered raceme, ca. 1 cm long, borne by an erect peduncle 14-22 cm long, with 2 bracts spaced along the length, from low on the ramicaul; floral bracts inflated, 6-7 mm long; pedicels 3-4 mm long; ovary 3-4 mm long, with 6 crests; **sepals** orange with diffuse, minute, purple dots, more or less coalescing into bars below the middle, the margins microscopically erose, with orange hairs within the margins easily shed, becoming glabrous, the dorsal sepal elliptical, concave, 15 mm long, 9 mm wide unexpanded, connate to the lateral sepals for 6 mm to form a non-gaping cup, the apex obtuse, contracted into a straight, stout, downward pointed tail 18-19 mm long, the lateral sepals elliptical, oblique, subacute, 14 mm long, 5 mm wide, connate 4 mm, the bases forming a round mentum below the column-foot, deflexed at the apices where contracted into stout tails 15 mm long; **petals** white with numerous, dark purple dots, oblong, 4 mm long, 1.5 mm wide, the apex truncate, apiculate, the margins minutely serrate, with a longitudinal carina within the labellar margin; **lip** white, suffused with purple above the middle, oblong-subpandurate, 3.75 mm long, 1.4 mm wide, the apex rounded with deflexed margins of the sides and apex deflexed, the disc superficially channeled between ill-defined marginal folds above the middle, the base subcordate, hinged beneath; **column** green with purple dots, stout, semiterete, 3.5 mm long, with an equally long, stout column-foot.

ECUADOR: **Cañar**: above Molleturo, alt. ca. 2800 m, collected by A. Andreetta, cultivated Aug. 1990 at Paute, A. Hirtz 5037 (Holotype: MO), C. Luer illustr. 15271; above Molleturo, alt. ca. 2000 m, collected by A. Andreetta, cultivated at Paute, Aug. 1989, by A. Hirtz 4424 (MO). **Azuay**: Chaucha, alt. 2200 m, Jan. 1994, A. Hirtz 6010 (MO).

This species, apparently endemic in southwestern Ecuador, is closely related to *M. tridens* which is more widely distributed and also occurring in southwestern Ecuador. Both species are characterized by several flowers borne simultaneously in a congested raceme, but the raceme of *M. sertula* is shorter and more congested with decurved tails.

The sepals are flesh-colored with minute, purple dots. The sepals of *M. tridens* are usually yellow, with or without dots or spots. The dorsal sepal of *M. sertula* is deeply concave and decurved. The sepaline tails are thick instead of slender, and more or less deflexed at their junction with the blades. The petals and lips of both species are similar in shape, but the lip of *M. sertula* is proportionately smaller.



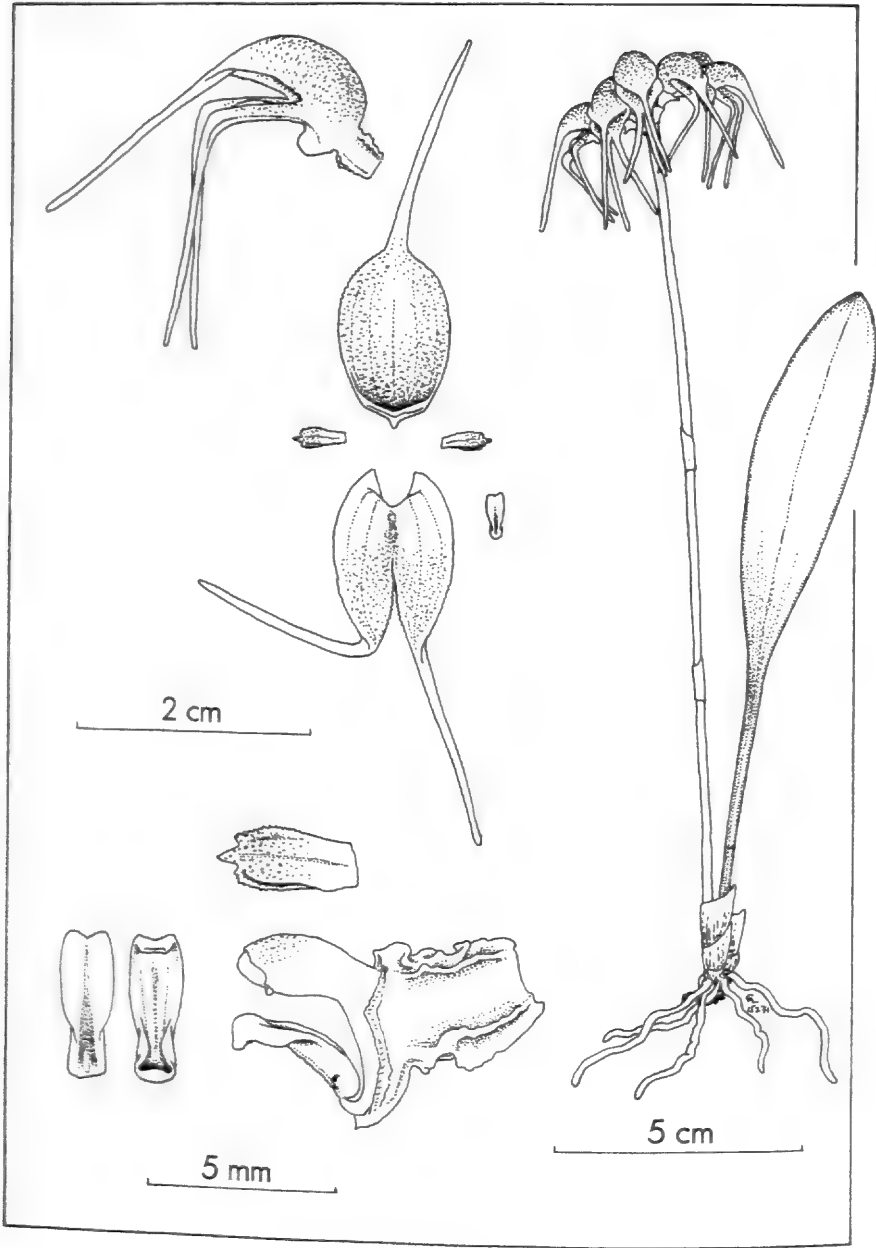


Plate 601. *Masdevallia sertula*

Masdevallia staaliana Luer & Hirtz, *Lindleyana* 9: 111, 1994.

Ety.: Named in honor of Dr. Gerardus Staal of Palo Alto, CA, who submitted this species for identification.

Plant medium in size, epiphytic, caespitose; roots slender. **Ramicals** slender, erect, 1-2 cm long, enclosed by 2-3 thin tubular sheaths. **Leaf** erect, coriaceous, petiolate, 7-11 cm long including the petiole 2-3 cm long, the blade elliptical, subacute to obtuse, 2-2.8 cm wide, the base cuneate into the petiole. **Inflorescence** an erect to suberect, loosely few-flowered raceme of 3-5 simultaneous flowers, 8-13 cm long including the peduncle, with 1-2 bracts below the raceme, from low on the ramical; floral bract inflated, 5 mm long; pedicel 3-4 mm long; ovary crested, 2 mm long, 2 mm broad; **sepals** light yellow, suffused with orange toward the base, the laterals mottled with red-brown externally, cellular-glandular externally, diffusely short-pubescent within, the dorsal sepal broadly elliptical, concave, 11 mm long, 8 mm wide unexpanded, connate to the lateral sepals for 3.5 mm to form a shallow, sepaline cup, the apex obtuse, contracted into a slender, yellow tail 10 mm long, the lateral sepals oblong, oblique, 11 mm long, 5.5 mm wide, connate 1 mm, the apices contracted into yellow tails similar to that of the dorsal sepal; **petals** light yellow, more or less oblong, unguiculate, 4.5 mm long, 1.6 mm wide, the truncate apex tridentate-apiculate, with the middle tooth the largest, both margins denticulate-fimbriate above the middle, the labellar margin with a longitudinal carina, ending in an obtuse angle above the claw; **lip** red-brown, oblong-pandurate, 5 mm long, 2 mm wide, with obtuse marginal folds above the middle, the epichile obovate, obtuse, tricallous, with the margins irregular and decurved, the hypochile oblong with the base truncate, shallowly cleft, hinged below, tricarinate beneath; **column** green, semiterete, 4.5 mm long, the foot 4 mm long with a short, incurved extension.

ECUADOR: **Azuay**: Chaucha, between Cuenca and Molleturo, alt. 2500-2700 m, collected Feb. 1993 by A. Hirtz, cultivated by Gerardus Staal in Palo Alto, CA, 28 Aug. 1993, *G. Staal* 93288 (Holotype: MO); C. Luer illustr. 17035; same collection, cultivated Dec. 1993, by *J & L Orchids* 1293-438 (MO); Chaucha near Molleturo, alt. 2200 m, collected by A. Hirtz, 1995, cultivated in Quito, *A. Hirtz* 6132 (MO).

Among the numerous species of subgenus *Amanda*, this pretty species is immediately recognized by the pubescent, yellow flowers. Vegetatively, the species does not differ markedly from most of the others of the subgenus, except that the leaves are among the shortest and the widest. The few-flowered inflorescence barely exceeds the leaf in length. Usually four to five flowers open nearly simultaneously. The flowers are of the same basic configuration seen in the majority of the species.

Externally the sepals are diffusely minutely pubescent, and internally the sepals are covered by a diffuse, dense, short pubescence. The tails are no longer than the blade. The petals are fimbriate on both borders and tridentate at the apex with the middle tooth much larger. The lip is pandurate with an anterior segment (the epichile) obtuse with three longitudinal calli and with revolute margins.



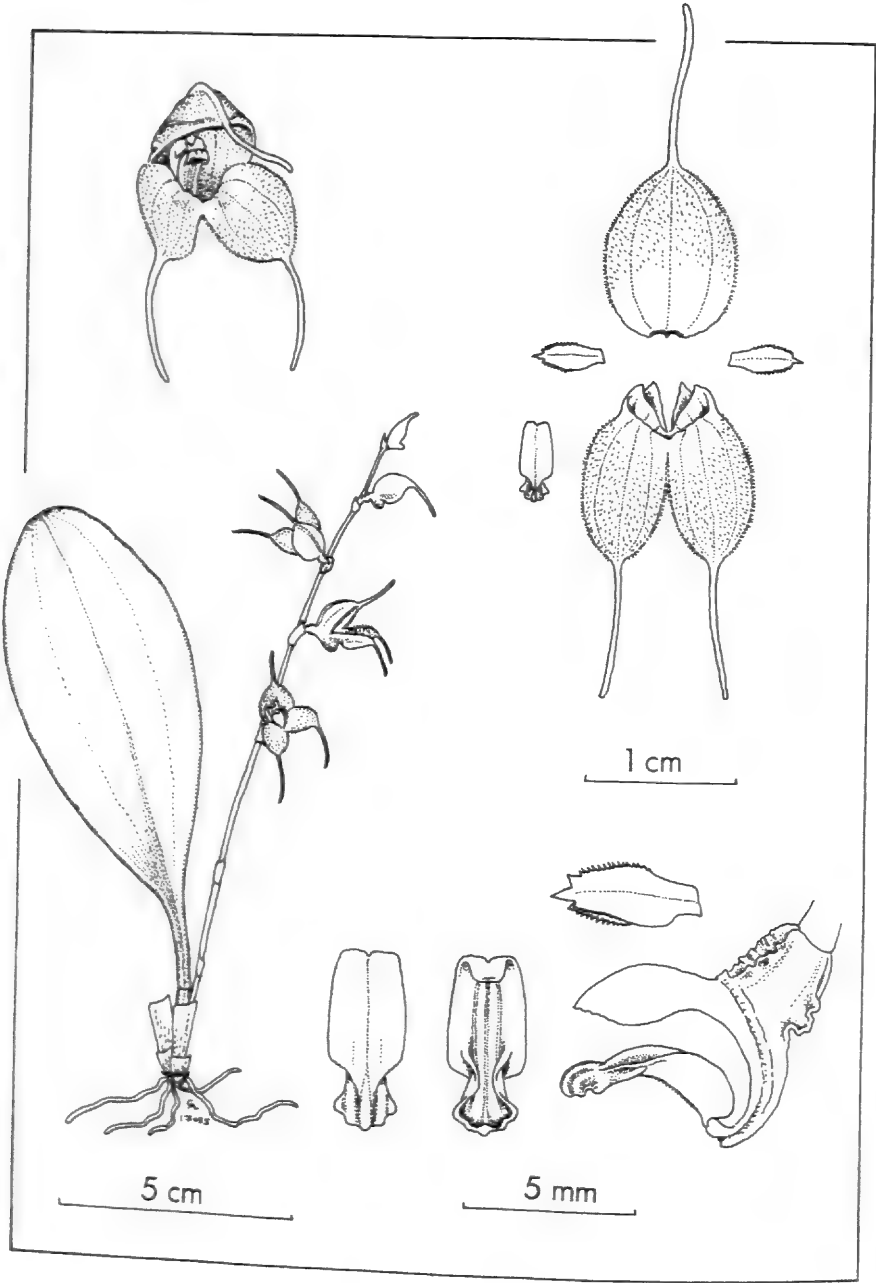


Plate 602. *Masdevallia staaliana*

Masdevallia tentaculata Luer, Selbyana 7: 112, 1982.

Ety.: From the Latin *tentaculatus*, "with tentacles," in allusion to the sepaline tails.

Plant small, epiphytic to terrestrial, shortly repent-ascending to caespitose; roots slender. Ramicauls slender, erect, 1-2 cm long, enclosed by 2-3 loose, imbricating, tubular sheaths. **Leaf** erect, coriaceous, 4-7.5 cm long including the 1.5-2.5 cm long petiole, the blade narrowly obovate, subacute to obtuse, 1-1.3 cm wide, gradually narrowed below into the petiole. **Inflorescence** an erect, loosely 4- to 8-flowered, distichous raceme, 10-17 cm long including the slender peduncle 7-10 cm long, with a bract below the middle, from low on the ramicaul; floral bract inflated, oblique, 3-4 mm long; pedicel curved, 3-6 mm long; ovary green, dotted with purple, 2-3 mm long, with 3 undulate wings; **sepals** glabrous, yellow, often sparsely dotted with purple toward the base, the dorsal sepal suborbicular, deeply concave, 5-6 mm long, 5-6 mm wide expanded, connate to the lateral sepals for 3-3.5 mm to form a subspherical cup, the rounded apex abruptly contracted into a slender, more or less curved, brown tail 8-13 mm long, the lateral sepals oblong, oblique, 5-6 mm long, 2.5 mm wide, connate 2 mm, the acute apices contracted into tails similar to that of the dorsal sepal; **petals** translucent greenish white with purple dots, oblong, slightly curved, 2.25 mm long, 0.5 mm wide, the truncate apex tridenticulate, with a thin, longitudinal carina along the lower margin ending in a thick, rounded, basal tooth; **lip** yellow, oblong, 2.75 mm long, 1.25 mm wide, with obtuse marginal folds in the distal third, superficially cleft centrally, the apex rounded, purple-brown, the base subcordate, hinged beneath; **column** greenish white, dotted with purple, semiterete, 2.5 mm long, the foot 2 mm long with a thick, incurved extension.

ECUADOR: **Bolívar**: terrestrial on the road embankment west of Guaranda, alt. 2800 m, 10 Mar. 1982, C. Luer & S. Dalström 7263 (Holotype: SEL); west of Guaranda toward Balzapamba, alt. 2000 m, 26 Mar. 1984, C. Luer, S. Dalström, T. Höijer, J. Kuijt & A. Hirtz 9734A (MO); west of Guaranda toward Puebloviejo, alt. 3100 m, 26 Mar. 1984, C. Luer, S. Dalström, T. Höijer, J. Kuijt & A. Hirtz 9747 (MO); between Chillanes and San José del Tambo, alt. 2500 m, 17 Feb. 1991, C. Dodson, N. Williams, M. Whitten, F L Stevenson & A. Embree 18704 (MO, QCNE). **Pichincha**: above Tandapi, alt. 2000 m, A. Hirtz 1005 (SEL); western slopes of Pichincha, collected by B. Malo, cultivated at Tarqui, 16 Sept. 1980, C. Luer 5452 (SEL).

This species is apparently endemic on the western slopes of the cordillera of central Ecuador. It is distinguished by the loose raceme of small, glabrous, yellowish, more or less tubular-globose, sepaline tubes constricted above the middle, and with slender, brown tails sometimes like tiny tentacles that curve inward after curving outward. The petals are narrowly oblong, slightly curved and tridenticulate. The epichile of the lip is proportionately small.



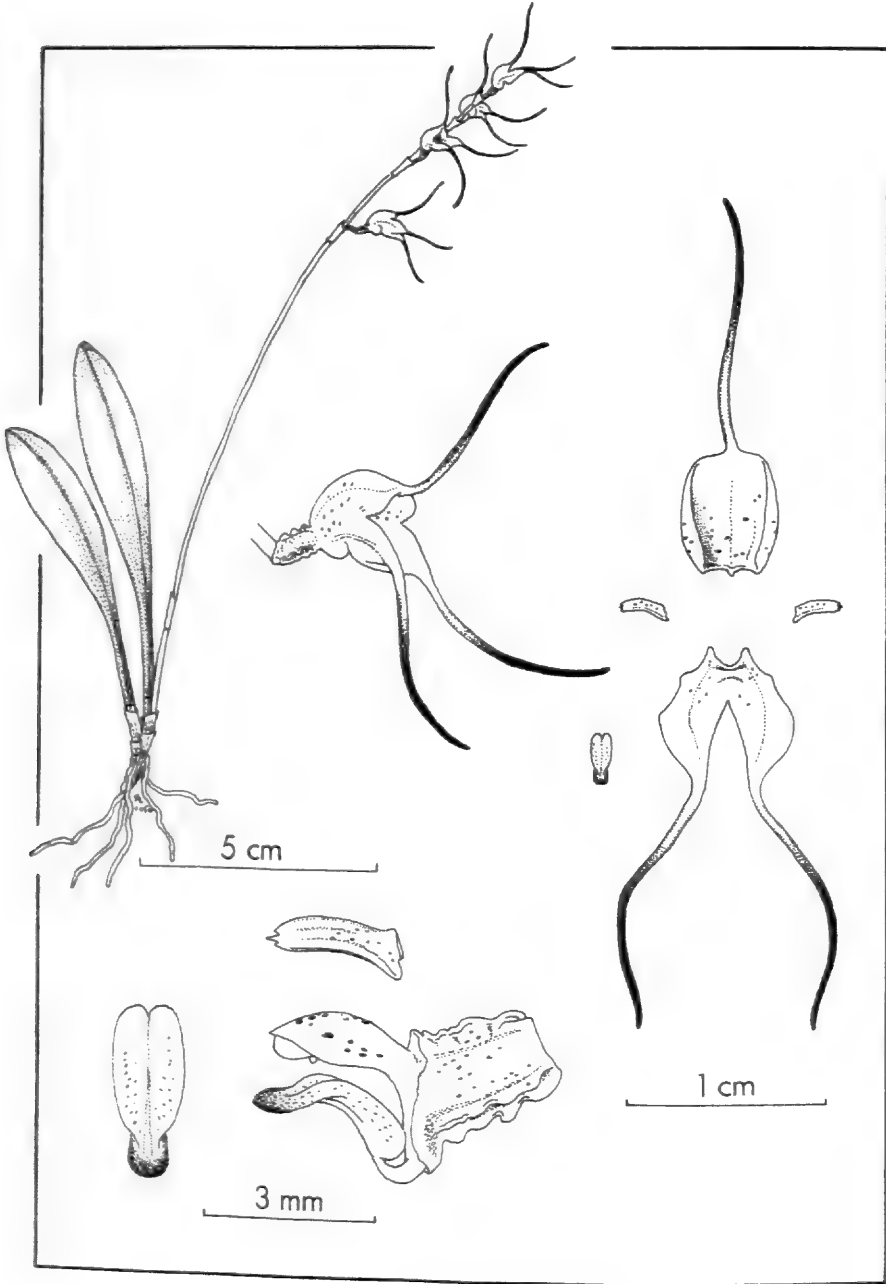


Plate 603. *Masdevallia tentaculata*

Masdevallia tridens Rchb.f., *Otia Bot. Hamburgensia* 1: 13, 1879.

Ety.: From the Latin *tridens*, "a trident, or any tool or instrument that bears three teeth," referring to the three sepaline tails.

Syn.: *Masdevallia jubar* Luer & Malo, *Phytologia* 42: 464, 1979.

Ety.: From the Latin *jubar*, "sunbeams, splendor," alluding to the yellow radiance produced by the yellow tails from the compact inflorescence.

Plant medium to large, epiphytic, shortly repent to caespitose, the rhizome more or less ascending; roots slender. Ramicauls slender, 2-3.5 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, long-petiolate, 8-15 cm long including the 3-8 cm long petiole, the blade elliptical, obtuse, 2.5-3.5 cm wide, cuneate below into the slender petiole. **Inflorescence** a congested, simultaneously several-flowered, more or less horizontal raceme, 2-3 cm long, borne by an erect to suberect, slender peduncle 15-18 cm long, with 3-4 short, evenly spaced, tubular bracts, from low on the ramicaul; floral bracts thin, oblique, acute, cucullate, 5 mm long, enclosing the pedicel and ovary; pedicel 2 mm long; ovary 2 mm long, with tall, undulating crests; **sepals** yellow-orange to pale yellow or yellow-white, often lightly dotted with red, glabrous except for the minutely erose margins, the dorsal sepal suborbicular, deeply concave, 9 mm long, 8 mm wide, connate to the lateral sepals for 4 mm to form a shallow, gaping sepaline cup, the rounded apex contracted into an orange, filiform tail ca. 2 cm long, the lateral sepals elliptical, 9 mm long, 4.5 mm wide, connate 3 mm across a transverse fold forming a rounded mentum below the column-foot, the subacute apices contracted into tails similar to that of the dorsal sepal; **petals** greenish white, oblong, 4 mm long, 1.5 mm wide, the upper margin minutely serrate, the apex tridentate, the middle tooth the longest, with a low, slender, longitudinal keel along the labellar margin; **lip** red-brown, oblong-subpandurate, 5 mm long, 2 mm wide, with marginal folds above the middle, shallowly channeled centrally, the apex convex, obtuse to rounded, the base cordate, hinged beneath; **column** yellowish white, semiterete, 5 mm long, with a curved foot nearly equally long.

ECUADOR: **Pichincha**: Nanegal near Quito, western declivity of Pichincha, 1868, *W. Jameson s.n.* (Lectotype here designated: K; tracing at W); road to Nanegal, *W. Jameson s.n.* (K; tracing at W); epiphytic in cloud forest above Chiriboga, alt. 2000 m, 1974, collected by B. Malo, cultivated at Tarqui, 20 July 1977, *C. Luer 1752* (holotype of *M. jubar*: SEL); terrestrial on the road cut above Tandapi, alt. 1800 m, 11 Mar. 1982, *C. Luer & S. Dalström 7279* (SEL); western slope of Mt. Pichincha, cultivated at Colomborquídeas, 18 Mar. 1989, *C. Luer 14214* (MO). **Imbabura**: Selva Alegre, alt. 2000 m, collected and cultivated in Quito, 14 Mar. 1991, by *J. del Hierro s.n.* (MO); Selva Alegre, alt. 2100 m, 28 Feb. 1992, *S. Dalström 1592* (MO). **Cotopaxi**: near Pilalo between Quevedo and Latacunga, alt. 2300 m, 4 May 1968, *G. Harling, G. Storm & B. Ström, 9072* (AMES, GB); near Macuchi between Quevedo and Latacunga, alt. 1800 m, 2 Apr. 1980, *C.H. Dodson & A. Gentry 10140* (MO, SEL).

COLOMBIA: **Valle del Cauca**: collected near Cali, obtained from 'Orquídeas del Valle,' cultivated in Wilmington, DE, Jan. 2003, by *M. Rao 124* (MO).



Of *M. tridens*, only a mutilated fragment of a flower and a pencil tracing of some of the vegetative parts of Jameson's specimen at Kew is in Reichenbach's herbarium at Vienna. Hence, the identification of this species with modern collections relies upon an "educated guess."

Masdevallia tridens occurs relatively frequently on the western declivities of the Andes of central Ecuador, but rarely in southern Colombia. The leaves are usually broad and long-petiolate. The raceme is short, distichous and congested with overlapping, yellowish flowers, and often held more or less horizontally. The petals are more or less tridentate at the apex with the middle tooth an apiculum. The margins are minutely serrate with a longitudinal callus above the labellar margin. The lip is divided above the middle into a rounded, convex epichile.

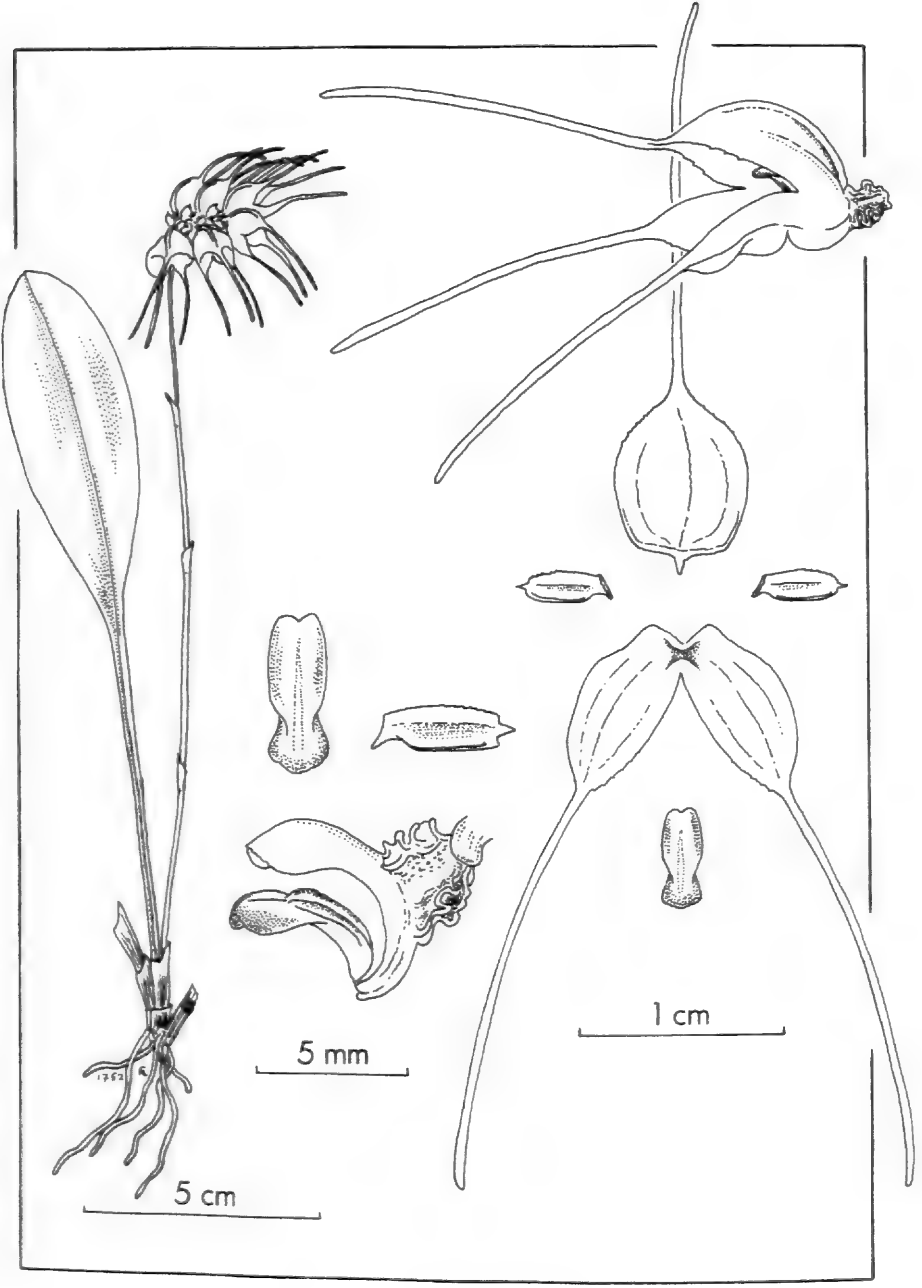


Plate 604. *Masdevallia tridens*

Masdevallia vittatula Luer & Escobar, *Harvard Pap. Bot.* 9: 9, 1996.

Etymology: From the Latin *vittatus*, "with little stripes," referring to the purple-striped sepals.

Plant small for the subgenus, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, coriaceous, long-petiolate, 9-11 cm long including the petiole 5-6 cm long, the blade elliptical, obtuse, 1.5-2 cm wide, cuneate below into the petiole. **Inflorescence** a congested, simultaneously several-flowered raceme up to 2 cm long, borne by a slender peduncle 15 cm long, with 2 distant bracts below the middle, from low on the ramicaul; floral bracts thin, inflated, enclosing the pedicel and ovary, ovate, 5 mm long, 4-5 mm wide expanded; pedicel 1.5 mm long; ovary purple, crested, 1.5 mm long; **sepals** white, each with 2 thin, purple veins, glabrous, with the free margins erose, the dorsal sepal suborbicular, concave, 5-5.5 mm long, ca. 5 mm wide incompletely expanded, 3-veined, connate to the lateral sepals for 1.5 mm to form a subglobose sepaline cup, the rounded free portion abruptly contracted into a yellow tail 12 mm long, the lateral sepals elliptical, 6 mm long, 3 mm wide, 3-veined, connate basally for 1 mm, the obtuse apices contracted into tails similar to that of the dorsal sepal; **petals** translucent white, oblong, 3 mm long, 1 mm wide, the apex with an acute apiculum, with a longitudinal callus along the lower margin ending in a low, rounded callus above the base; **lip** white, mottled with brown in 3 rows, oblong, subpandurate, 3 mm long, 1 mm wide, divided above the middle by oblique, marginal folds, channeled medially, the epichile rounded, convex, the hypochile oblong, subcordate at the base, hinged beneath; **column** white, with purple edge, semiterete, 3 mm long, the foot stout, 2 mm long, with a short, thick, incurved extension.

COLOMBIA: **Nariño:** near Ricaurte, collected by J. Aguirre, flowered in cultivation by Francisco Villejas at Orquifollajes near Guarni, Colombia, 9 July 1996, *C. Luer 17983* (Holotype: MO).

ECUADOR: **Carchi:** between Tulcán and Maldonado, alt. 2080 m, July 1991, collected and cultivated by *F L Stevenson 92-0612-1* (MO); at pass above Maldonado, alt. 2450 m, 15 Jan. 1992, *C. Luer, J. Luer, P. & A. Jesup 16036* (MO); above Maldonado, alt. 2300 m, Feb. 1995, *A. Hirtz 6167* (MO).

Pichincha: epiphytic in forest west of Quito, alt. 2000 m, 1979, collected by A. Andretta, cultivated in Cuenca, 18 Aug. 1978, *C. Luer 3313* (SEL).

This species has long been considered synonymous with *M. caloptera* from northern Peru to which it is superficially similar. The sepals of both species are white with two purple stripes on each sepal. *Masdevallia vittatula* occurs in southern Colombia and northern Ecuador. In his monograph of 1925, Kränzlin cites collections of *M. caloptera* from Peru and Colombia, the latter being this species not recognized at that time.

Masdevallia vittatula is distinguished from *M. caloptera* by smaller flowers with a dorsal sepal that is not so proportionately large; proportionately longer sepaline tails; oblong, fringeless petals; and a smaller, deeply channeled lip.

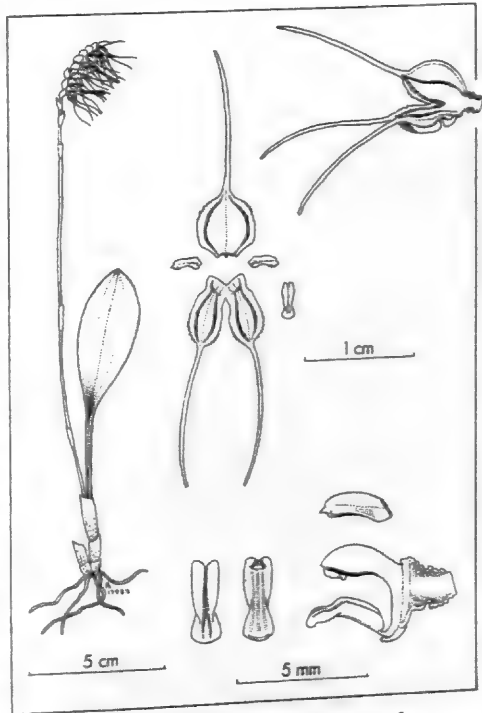


Plate 605A. *Masdevallia vittatula*

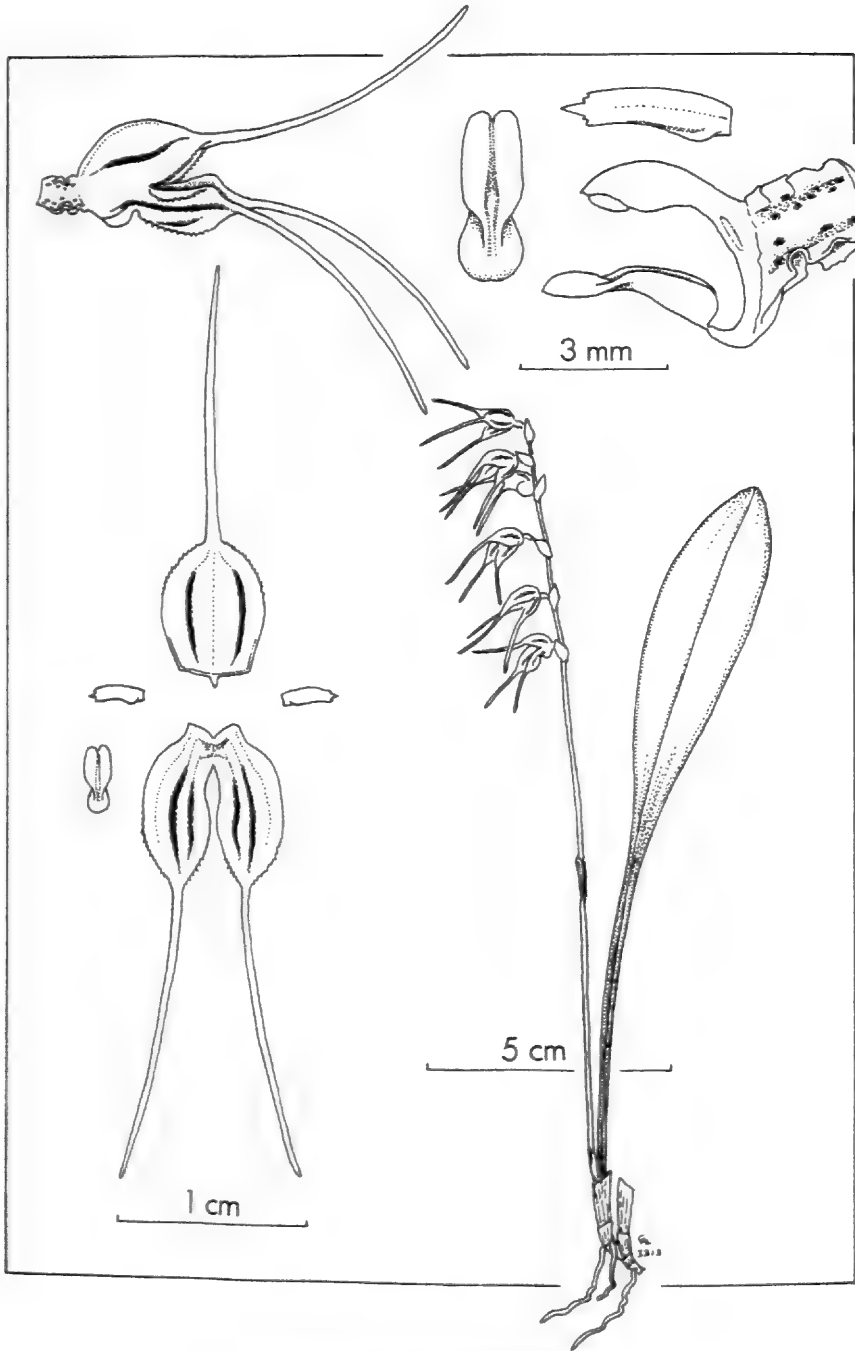


Plate 605. *Masdevallia vittatula*

Masdevallia xanthodactyla Rchb.f., Gard. Chron. n.s. 8: 552, 1877.

Ety.: From the Greek *xanthodactylos*, "yellow finger," referring to the sepaline tails.

Plant medium in size, epiphytic, ascending-caespitose; roots slender. Ramicauls slender, erect, 1-2.5 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, coriaceous, 4-10 cm long including an indistinct petiole 1-3 cm long, the blade narrowly elliptical-oblong, subacute, 1-1.5 cm wide, narrowly cuneate below into the petiole. **Inflorescence** 10-17 cm long, including a loose, secund to subsecund, simultaneously several-flowered raceme up to 10 cm long, with the peduncle slender, erect, with 1-2 distant bracts below the middle, from low on the ramicaul; floral bracts thin, tubular, 3-5 mm long; pedicels 4-8 mm long; ovary 2 mm long, with minimally undulate ribs; **sepals** greenish white, spotted with purple, glabrous, the blade of the dorsal sepal obovate, concave, 7-9 mm long, 3.5-5 mm wide expanded, connate to the lateral sepals for 4-6 mm to form an arcuate tube, the free portion triangular, obtuse, contracted into a thick, yellow or orange tail 4-5 mm long, the lateral sepals ovate, oblique, 5-6.5 mm long, 2.5-3.5 mm wide, connate 3-4 mm to form a mentum below the column-foot, the free portions acute, continuous into thick, yellow tails 4-5 mm long; **petals** white, oblong, 3-3.5 mm long, 1-1.25 mm wide, the apex truncate, shallowly tridentate, with an apiculum, the margins minutely denticulate at the apex, the labellar half with a longitudinal callus; **lip** yellow or white, oblong-ovate, 3.5-5 mm long, 1.5-2 mm wide, with marginal folds above the middle from a pair of low, longitudinal calli on the disc, the apex oblong, obtuse, the base cordate, hinged below; **column** white, semiterete, 2-3 mm long, the foot 2 mm long with a short, incurved extension.

PERU: Without locality, cultivated by Sander, collected by B. Roehl s.n. (Holotype: W).

ECUADOR: **Loja**: without locality, alt. 2300-2500 m, Sept. 1876, F.C. Lehmann 7012 (AMES, K); same area, collected by B. Malo, cultivated at Tarqui near Cuenca, 19 July 1977, C. Luer 1750 (SEL); Las Chinchas, alt. 2200 m, collected by A. Andreetta & M. Portilla, cultivated in Cuenca, 6 Nov. 1979, C. Luer 4696 (SEL). **Chimborazo**: between Huigra and Alausí, collected by A. Andreetta & M. Portilla, cultivated at Paute, 16 May 1988, C. Luer 13393 (MO).

This species is relatively frequent in the damp forested valleys of semi-arid southwestern Ecuador and adjacent northern Peru. It is characterized by a loose, secund raceme of arcuate, greenish white, more or less purple-spotted flowers borne by pedicels somewhat longer than the floral bracts. The sepaline tails are thick and yellow, and slightly shorter than the blades. The petals are denticulate and tridentate at the apex. The lip is white or yellow and shallowly channeled between longitudinal calli.

Masdevallia xanthodactyla is similar to *M. melanopus*. In addition to much less pigmented flowers, it is most easily distinguished from the latter by pedicels that are distinctly longer than the floral bracts. In *Thesaurus Masdevalliarum*, *M. xanthodactyla* was treated as a synonym of *M. melanopus*. Before pointing out this difference, Reichenbach also considered the two as belonging to the same species.

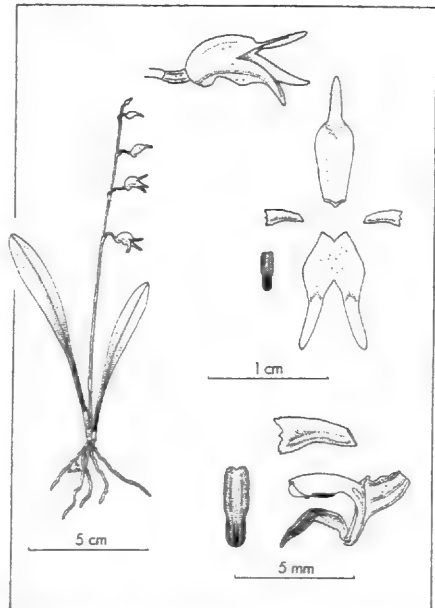
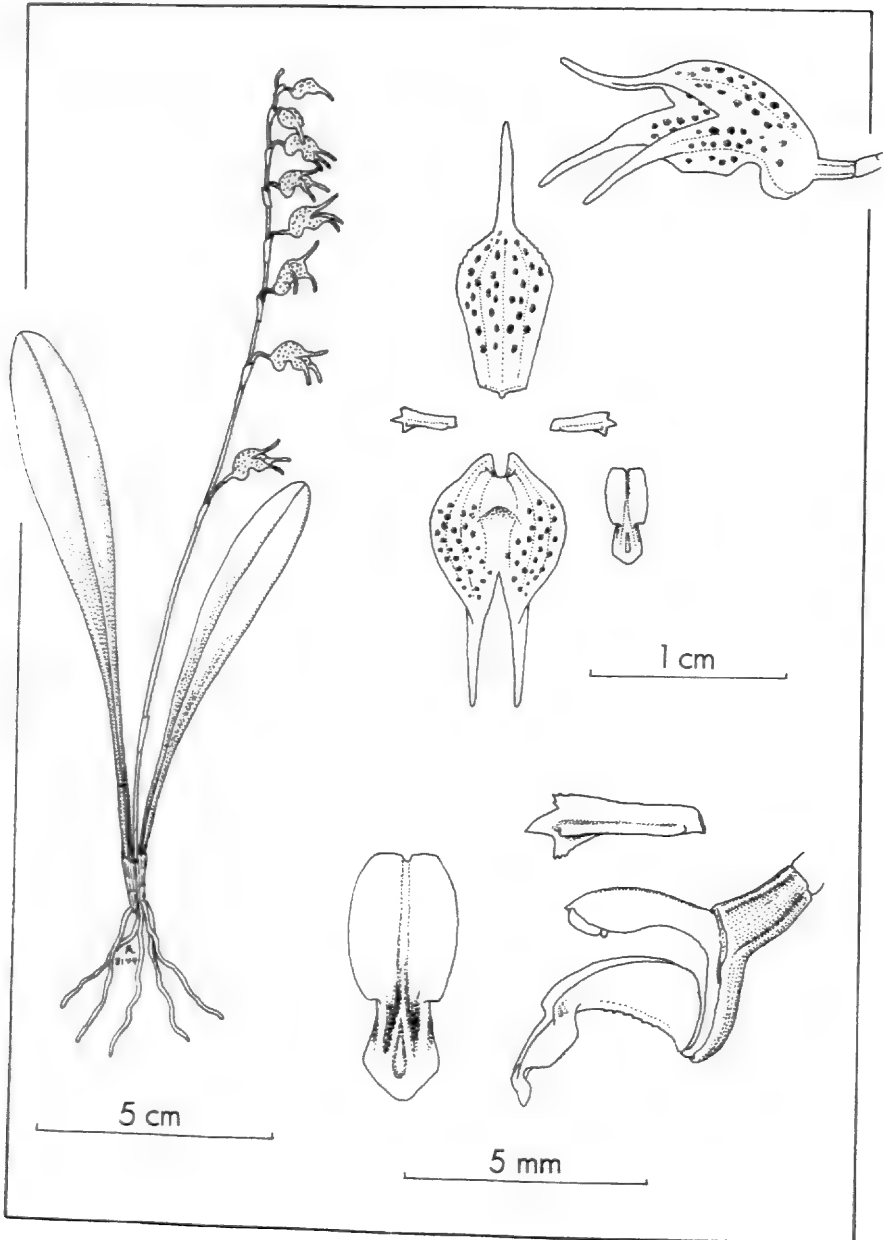


Plate 606. *Masdevallia xanthodactyla*

Plate 607. *Masdevallia xanthodactyla*

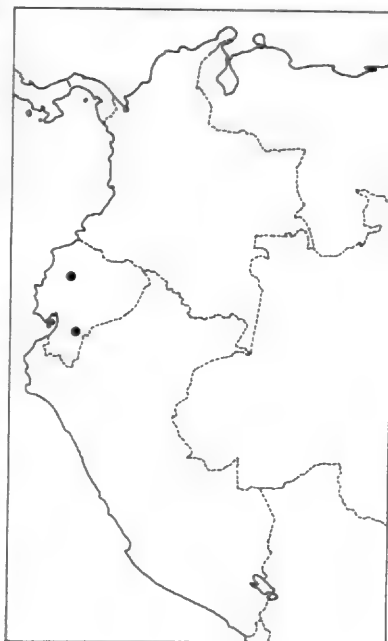
Masdevallia zygia Luer & Malo, *Selbyana* 5: 395, 1981.

Ety.: From the Greek *zygios*, "yoked, or paired," referring to the two-flowered inflorescence.

Plant large, epiphytic, caespitose; roots slender. **Ramicauls** erect, stout, 2.5-3.5 cm long, enclosed by 2-3 loose, imbricating, tubular sheaths. **Leaf** erect, coriaceous, long-petiolate, 12-20 cm long including the 6-8 cm long petiole, the blade elliptical, subacute, subplicate, 3-4 cm wide, cuneate below into the petiolate base. **Inflorescence** a simultaneously 2-flowered raceme, 3 cm between the flowers, often with an aborted third flower above, borne by an erect, terete peduncle 18-24 cm long, with a bract below the middle and another at the base, from low on the ramicaul; floral bract inflated, 1.5 cm long, 1 cm wide, enclosing the pedicel and ovary; pedicel thick, 4-5 mm long; ovary 3-crested, 5 mm long; **sepals** rose, suffused and spotted with purple, lightly verrucose and pubescent within, the dorsal sepal ovate, concave, 17 mm long, 13 mm wide, connate to the lateral sepals for 7 mm to form a cup, the obtuse apex abruptly contracted into a yellow tail 3.5 cm long, the lateral sepals ovate, 20 mm long, 8 mm wide, connate 8 mm, the subacute apices contracted into tails similar to that of the dorsal sepal; **petals** white with purple spots, oblong, 6.5 mm long, 2.3 mm wide, the apex sub-tridentate, apiculate, the upper margin minutely serrulate above the middle, the labellar margin with a longitudinal callus ending in a curve a short distance above the unguiculate base; **lip** verrucose, diffusely spotted with purple on cream, oblong-ligulate, 5.5 mm long, 2.5 mm wide, the apex rounded, slightly narrowed above the middle, the subcordate base hinged beneath, the disc with a pair of low, ill-defined calli; **column** white, marked with purple, semiterete, 5.5 mm long, with a short, thick foot.

ECUADOR: **Zamora-Chinchipe**: epiphytic in cloud forest between Loja and Zamora, alt. 2500 m, collected ca. 1975 with *M. rosea* Lindl. by B. Malo, cultivated at Tarqui, 8 May 1981, *C. Luer 6093* (Holotype: SEL); same collection, cultivated at Colomborquídeas, 10 Apr. 1988, *C. Luer 13170* (MO). **Pichincha**: above Tandapi, alt. 2000 m, collected by M. & F. Navarro, cultivated in Quito, A. Hirtz 5109 (MO).

This, the largest flowered species of subgenus *Amandae*, and one of the rarest, has been recently discovered on the western slopes of the Andes of central Ecuador, which causes the locality of the plant originally described to be doubted. Except for *M. amanda*, none of the numerous other species of the section has been found on the southeastern slopes. *Masdevallia zygia* is easily recognized by the large habit and a few simultaneous, large, brown, distantly spaced flowers with crested ovaries. The sepals and petals do not vary far from the usual forms found in the section.



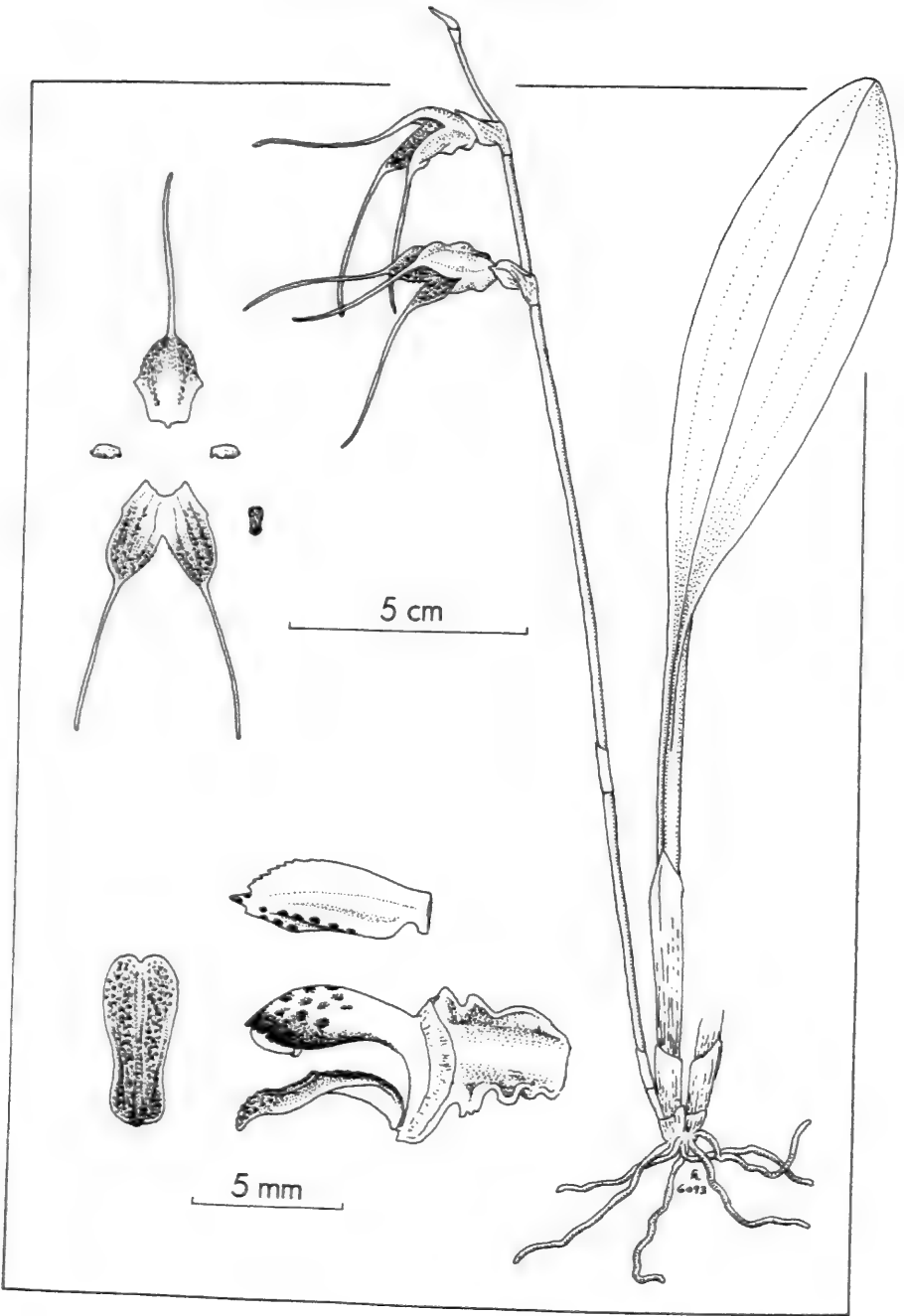


Plate 608. *Masdevallia zygia*

MASDEVALLIA SUBGENUS CUCULLATIA

The infrageneric subdivision *Cucullatae* was proposed in 1878 by Reichenbach in his description of *M. corniculata*. With the huge, inflated, cucullate, floral bract, he noted the affinity of *M. corniculata* to Lindley's *M. cucullata*, based on an 1842 collection by Jean Linden, the first species attributable to the subgenus. The final four species that now constitute the subgenus of six Andean species have been added in the past few years.

Masdevallia subgenus **Cucullatia** Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 77: 10, 2000.

Type: *Masdevallia cucullata* Lindl.

Ety.: From the Latin, *cucullus*, "a hood," referring to the inflated floral bract.

Syn.: *Masdevallia* sect. *Cucullatae* Rchb.f., Gard. Chron. n.s., 9: 72, 1878.

Syn.: *Masdevallia* subsect. *Cucullatae* (Rchb.f.) Veitch, Man. Orch. Pl. 5: 18, 1889.

Plants large, robust, caespitose; roots coarse. Ramicauls erect, stout, shorter than the leaf, mostly concealed by 2-3 loose, imbricating sheaths, the inflorescence emerging laterally from near the middle. **Leaf** erect, thickly coriaceous, elliptical to narrowly elliptical, subacute to obtuse, petiolate. **Inflorescence** a solitary flower, borne by an erect, stout peduncle, round in cross section, with a bract near or at the base; floral bract large, inflated, enclosing the pedicel, ovary and base of the sepaline tube; pedicel short, stout; ovary fleshy-carinate; **sepals** fleshy, variously colored, smooth to rugose within, acute to obtuse, variously connate into a cup or broad tube, with the apices contracted into tails; **petals** cartilaginous, callous along the labellar margin, usually producing a small process at the base, the apex variously verrucose, twisted or channeled; **lip** thick, oblong, with marginal folds that divide the lip into an epichile and a hypochile, the base truncate, hinged to a short, stout extension from the column-foot; **column** stout, semiterete, the anther ventral, shortly hooded, the stigma ventral, the base of the column developed into a stout column-foot with the apex of the ovary.

The subgenus *Cucullatia* is characterized by a robust habit and a solitary, relatively large, strong flower. The inflorescence emerges from the ramicaul a considerable distance above the base. The peduncle is round in cross section. A distinctive, large, inflated, foliaceous floral bract encloses an abbreviated pedicel, a thickly carinate ovary, and the basal portion of the flower. The sepals are rigidly fleshy. The apices of the cartilaginous petals are variously thickened, channeled, twisted, or verrucose. The lip is divided by marginal folds near the middle to create an epichile and a hypochile.



BINOMIALS PUBLISHED IN *MASDEVALLIA* ATTRIBUTABLE TO
SUBGENUS *CUCULLATIA*

<i>M. calyptrata</i> Kraenzl. = <i>M. corniculata</i>	
<i>M. cerastes</i> Luer & Escobar.....	Plate 609.
<i>M. corniculata</i> Rchb.f.	Plate 610.
<i>M. corniculata</i> var. <i>inflata</i> (Rchb.f.) Veitch = <i>M. corniculata</i>	
<i>M. cucullata</i> Lindl.	Plate 611.
<i>M. delhierroi</i> Luer & Hirtz.....	Plate 612.
<i>M. ecliptrata</i> Kraenzl. <i>sphalma</i> = <i>M. corniculata</i>	
<i>M. hercules</i> Luer & Andreetta.....	Plate 613.
<i>M. inflata</i> Rchb.f. = <i>M. corniculata</i>	
<i>M. vidua</i> Luer & Andreetta.....	Plate 614.

KEY TO THE SPECIES

1 Petals with the apex papillose-verrucose.....	2
1' Petals with the apex channeled-verrucose.....	3
2 Sepals smooth within, unstriped; lip with the apex minutely verrucose	<i>M. cucullata</i>
2' Sepals rugose with multiple, fine lines; lip with the apex fringed.....	<i>M. hercules</i>
3 Sepals coarsely rugose-verrucose within.....	<i>M. cerastes</i>
3' Sepals more or less rugose, but not coarsely verrucose within.....	4
4 Peduncle less than 8 cm long.....	<i>M. corniculata</i>
4' Peduncle more than 12 cm long.....	5
5 Sepals yellow, with the blade of the dorsal sepal ca. 19 mm long and connate ca. 12 mm.....	<i>M. delhierroi</i>
5' Sepals deep purple, with the blade of the dorsal sepal ca. 27 mm long and con- nate ca. 20 mm.....	<i>M. vidua</i>

Masdevallia cerastes Luer & Escobar, *Orquideología* 13: 51, 1978.

Ety.: From the Latin *cerastes*, "a horned snake," in allusion to the appearance of the flower.

Plant large, robust, epiphytic, caespitose; roots coarse. Ramicauls stout, channeled, erect, 5-7 cm long, enclosed by a loose, tubular sheath with 1-2 shorter sheaths at the base. **Leaf** erect, thickly coriaceous, carinate along the dorsal midrib, 13-25 cm long including the 2.5-10 cm long petiole, the blade elliptical, obtuse, 3-4.2 cm wide, cuneate below into the channeled petiole. **Inflorescence** a large, solitary, deep purple flower borne by a stout peduncle 4-4.5 cm long, subtended by a basal bract, from high on the ramicaul; floral bract inflated, oblique, obtuse, ca. 2 cm long, ca. 2 cm wide expanded, enclosing pedicel and ovary; pedicel stout, 2 mm long, 4 mm broad; ovary white, spotted with purple, 7 mm long; dorsal sepal covered with coalescing spots of deep purple, verrucose within and without, broadly elliptical, concave, 27 mm long, 20 mm wide expanded, connate to the lateral sepals for 12-13 mm to form a subglobose sepaline cup, the free portion rounded with the obtuse to rounded apex produced into a slender, ascending, slender tail 20 mm long; lateral sepals more or less ovate, concave basally, 30 mm long, 10 mm wide, connate 20 mm to form an inflated sac 23 mm broad unexpanded, the free portions deflexed, with a longitudinal, serpentine callus down the center of each, the subacute apices contracted into slender tails 17 mm long; **petals** cartilaginous, white, marked with purple-brown, oblong, 7 mm long, 2.75 mm wide, obtusely angled above the middle on the upper margin, the apex truncate, convolute, twisted, the base with a small, obtuse, retrorse tooth; **lip** yellow, spotted with purple-brown, oblong-subpandurate, arcuate, 7 mm long, 3 mm wide, with acute marginal folds near the middle, the epichile ovate, obtuse, verrucose, denticulate, the hypochile thick, lightly conduplicate-cordate, hinged on the end; **column** white, stout, semiterete, 6 mm long, the foot thick, 3 mm long, with an incurved extension.

COLOMBIA: **Putumayo**: Valle del Sibundoy, alt. 2200-2600 m, Aug. 1977, collected by J.M. Serna, cultivated by Janet Kuhn at J & L Orchids, Easton, CT, 4 Mar. 1978, *C. Luer* 2785 (Holotype: JAUM; Isotype: SEL); Valle del Sibundoy, El Salodo, ca. 1976, collected by O. Ospina, cultivated in Bogotá, Aug. 1980, *P. Ortiz* V. 982 (COL); same collection, cultivated at Colomborquídeas, 18 Mar. 1989, *C. Luer* 14231 (MO).

This strange species is apparently endemic in the valley of Sibundoy in southern Colombia. Similar to sympatric *M. corniculata*, from which it is indistinguishable vegetatively, it is characterized by a large, coriaceous leaf, a short peduncle and a large, inflated floral bract that engulfs the base of the flower.

The large, dark purple flowers are distinctive with conspicuous, thickly wrinkled veins on the inner surfaces of the sepals that are inflated toward the base. The obtuse apices are contracted into short, slender tails. The channeled apices of the petals are similar to those of *M. corniculata*.



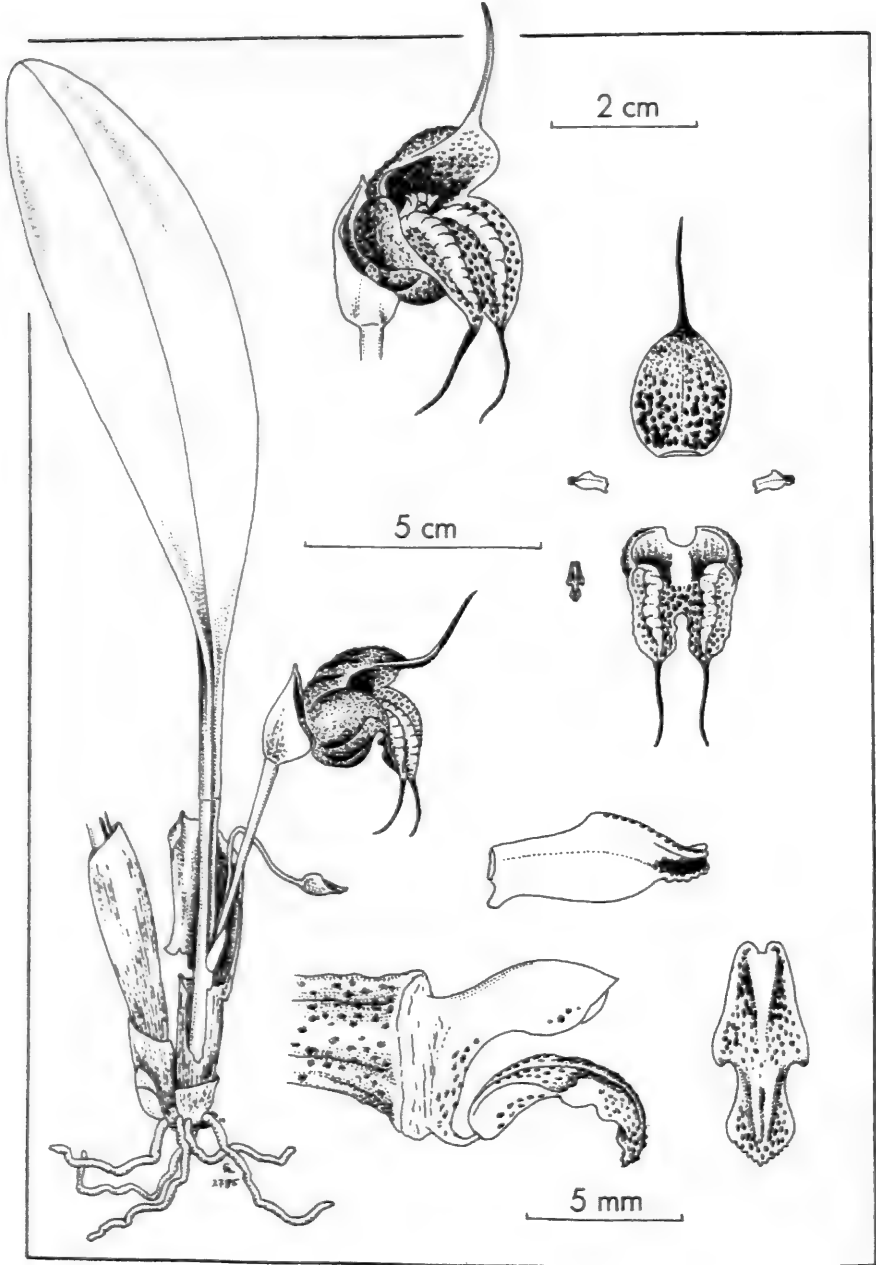


Plate 609. *Masdevallia cerastes*

Masdevallia corniculata Rchb.f., Gard. Chron. n.s., 9: 72, 1878.

Ety.: From the Latin *corniculatus*, "with a small horn," referring to the twisted, verrucose horn at the apex of the petal.

Syn.: *Masdevallia inflata* Rchb.f., Gard. Chron. n.s., 16: 716, 1881.

Ety.: From the Latin *inflatus*, "inflated," referring to the inflated bract and sepaline tube.

Syn.: *Masdevallia corniculata* var. *inflata* (Rchb.f.) Veitch, Man. Orchid. Pl. 5: 37, 1889.

Syn.: *Masdevallia calyptrata* Kraenzl., Gard. Chron. ser. 3, 18: 377, 1895, as *ectyprata*, et Notizbl. Königl. Bot. Gart. Berlin 1: 83, 1895.

Ety.: From the Latin *calyptratus*, "bearing a caplike covering," referring to the floral bract.

Plant medium to large in size, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 3-6 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, thickly coriaceous, petiolate, 10-15 cm long including the petiole 3-5 cm long, the blade elliptical, obtuse, 2.5-3.3 cm wide, cuneate below into the channeled petiole. **Inflorescence** a solitary flower borne by a stout, erect peduncle 3.5-8 cm long, with a basal bract, from low on the ramicaul; floral bract cucullate, 2-3 cm long, 2 cm wide expanded, enclosing the pedicel, ovary, and lower portion of the sepals; pedicel 2-8 cm long, up to 4 mm wide; ovary 7-10 mm long, with low, undulate wings; **sepals** deep red-purple, to red-brown, to yellow or orange, with or without purplish spots, glabrous, the dorsal sepal oblong, 15-27 mm long, 9-12 mm wide, connate to the lateral sepals for 14-18 mm to form a broad, sepaline tube, the free portion transversely triangular, the obtuse apex contracted into a slender tail 2-5 cm long, the lateral sepals with low, subverrucose rugae within, ovate, oblique, 18-25 mm long, connate 20 mm to form a shallow mentum, 25-30 mm wide expanded together, the obtuse apices contracted into slender tails 2-3.5 cm long; **petals** cartilaginous, yellow, more or less ovate-oblong, 7.5 mm long, 3 mm wide, carinate externally the apex narrowly obtuse, longitudinally channeled and twisted, verrucose externally, both halves longitudinally callous, the labellar margin ending in a rounded callus at the base; **lip** yellow, with or without purple dots, oblong-subpandurate, 6-7 mm long, 3 mm wide, with oblique marginal folds near the middle, the epichile oblong, rounded, verrucose, the base subcordate with elevated margins, hinged on the end; **column** white, with or without purple spots, semiterete, 6 mm long, the foot 4 mm long, with a stout, extension.

COLOMBIA: Without collection data, cultivated in York, England, 1878, by Mr. Backhouse s.n. (Holotype: W); without collection data, cultivated by Mr. Bull s.n. (holotype of *M. inflata*: W); without collection data, cultivated at Berlin (holotype of *M. calyptrata* destroyed at B). **Santander**: west of Velez, alt. 2150 m, 5 May 1984, C. Luer, J. Luer, R. Escobar & E. Valencia 10116 (MO). **Boyacá**: forest near Arcabuco, cultivated at J & L Orchids, Easton, CT, 9 Nov. 1977, C. Luer 2135 (SEL); same area, alt. 2480 m, 25 Apr. 1982, C. Luer, J. Luer, R. Escobar & D. Portillo 7573 (SEL); between Arcabuco and Moniquirá, collected by E. Valencia, cultivated at Colomborquedeas, 17 Apr. 1988, C. Luer 13217 (MO). **ECUADOR**: **Sucumbios**: La Bonita, alt. 2000 m, Dec. 1991, A. Hirtz 5672 (MO); between La Bonita and Rosa Florida, alt. 2000 m, 14 Mar. 1996, S. Dalström et al. 2138 (MO). **Morona-Santiago**: Cordillera del Cutucú, alt. 1800 m, Oct. 1983, collected by A. Andreetta & M. Portilla, cultivated at Paute, 16 Mar. 1984, C. Luer 9532 (SEL); epiphytic in forest west of San Juan Bosco, alt. 1600 m, 4 Apr. 1988, W. Teague s.n. (MO).



Reichenbach described *M. corniculata* from a cultivated plant from the collection of Mr. Backhouse of York, England. It was known to have been collected by both Carder and Shuttleworth in Colombia. It occurs in all three cordilleras of Colombia and on the eastern slopes of the Andes of Ecuador.

Masdevallia corniculata is recognized by the large, inflated floral bract that engulfs the pedicel, ovary, and the basal part of the flower. The flower is borne on a pedicel considerably shorter than the leaves. The color of the sepals of plants from Ecuador is purple, but yellow, orange, and purple-spotted forms are known from Colombia. The inner surface of the lateral sepals is rugose-verrucose. The horn-like apex of the petals is channeled, twisted, and verrucose.

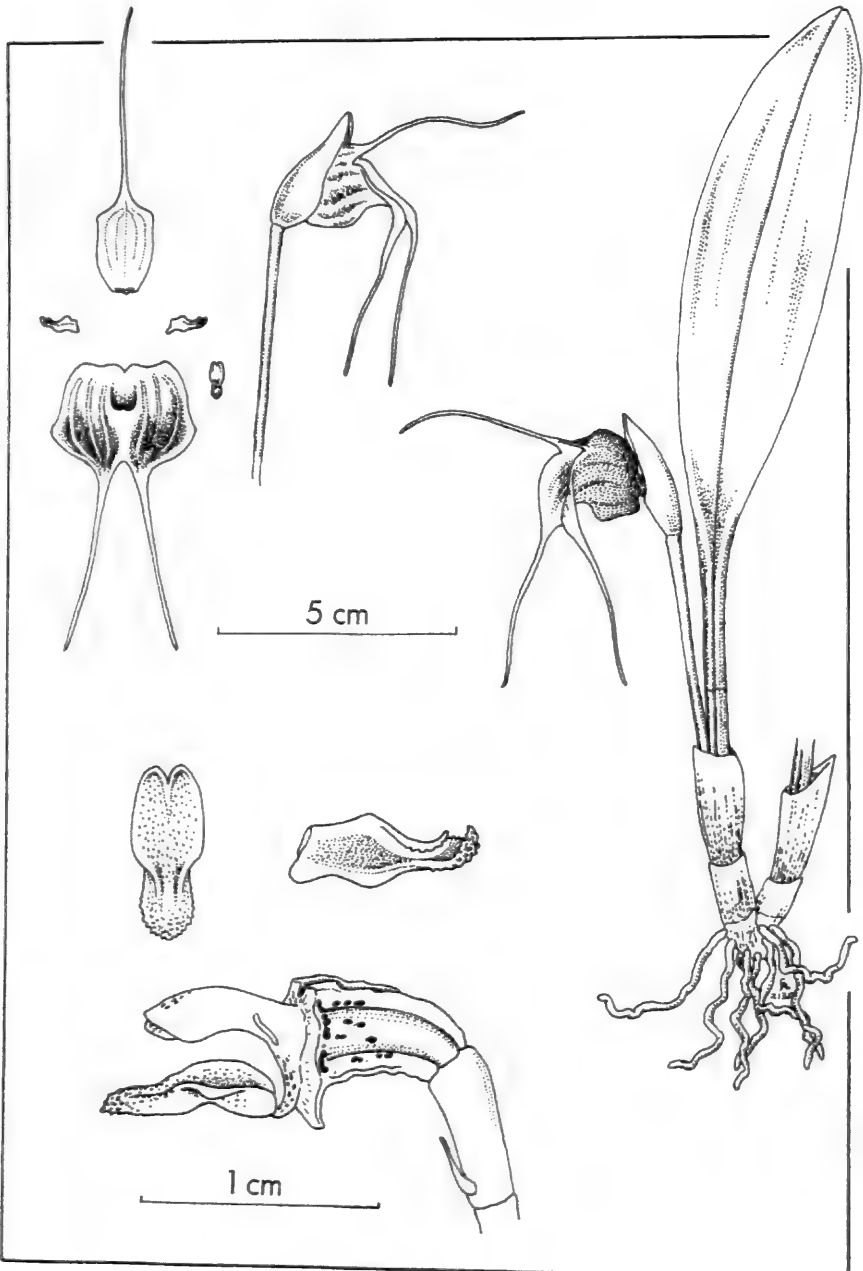


Plate 610. *Masdevallia corniculata*

Masdevallia cucullata Lindl., *Orch. Lind.* 4, 1846.

Ety.: From the Latin *cucullatus*, "hooded," in reference to the large floral bract.

Plant large, robust, epiphytic to terrestrial, caespitose; roots coarse. Ramicauls stout, erect, 6-12 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** coriaceous, erect, petiolate, 10-20 cm long including the petiole 4-6 cm long, the blade elliptical, subacute to obtuse, 2.5-3.8 cm wide, the base cuneate into the channeled petiole. **Inflorescence** a solitary flower borne by an erect, stout peduncle 15-20 cm long, with a tubular bract below the middle, from high or near the middle of the ramicaul; floral bract broadly cucullate, 3 cm long, enclosing the pedicel, ovary, and much of the sepals, the abaxial margins connate 1 cm, 2 cm wide expanded; pedicel stout, 3-4 mm long, 3-4 mm wide; ovary 7-10 mm long, with 3 undulate ribs; **sepals** deep red-purple, more or less yellowish toward the base, glabrous, the veins prominent externally, the dorsal sepal elliptical, 27 mm long, 14 mm wide, connate to the lateral sepals for 14 mm to form a gaping, sepaline tube, the free portion ovate, with the obtuse apex contracted into a slender tail ca. 5.5 cm long, gradually becoming yellow toward the apex, the lateral sepals ovate, oblique, 35 mm long, 18 mm wide, connate 17 mm to form a secondary mentum above the mentum with the column-foot, the acute apices contracted into slender, orange-brown tails ca. 4.5 cm long; **petals** cartilaginous, white, suffused with purple at the apex, elliptical, 7 mm long, 2.5 mm wide, narrowed toward the truncate, verrucose apex, the lower margin with a longitudinal callus; **lip** deep purple, oblong, 6.5 mm long, 3 mm wide, with oblique marginal folds near the middle, the epichile oblong, rounded, papillose, the disc lightly channeled, the base subcordate with elevated margins, hinged below; **column** suffused with purple, stout, semiterete, 5 mm long, the foot thick, 3 mm long, with a short, incurved extension.

COLOMBIA: Cundinamarca: epiphytic in thick forest near Fusagasuga, alt. 7,200 ft., Dec. 1842, *J. Linden* 869 (Holotype: K; Isotypes: BR, W); north of San Miguel near Fusagasuga, alt. 2700-2800 m, 16 Feb. 1941, *J. Renz* 3571 (BAS); Fusagasuga, alt. 1800 m, Dec. 1939, *J. Renz* 3591 (BAS); northeast of Bogotá, alt. 2800 m, 27 July 1941, *J. Renz* 4172 (BAS). **Antioquia:** "Medellín," *Patin* s.n. (W); Frontino, *Shuttleworth* s.n. (W); "Antioquia," *G. Schmidchen* s.n. (W); Sonsón, 1868, *G. Wallis* s.n. (W); above Aguadas, alt. 2300 m, 17 Sept. 1883, *F.C. Lehmann* 3190 (BM, BR, G); El Retiro, alt. 2200-2500 m, Dec. 1891, *F.C. Lehmann* 7458 (AMES, G, K, LE, W); El Retiro, Hda. Normandía, alt. 2500 m, 2 Dec. 1956, *M. Ospina* H. 86 (AMES); Sonsón, alt. 2000-2500 m, 20 Nov. 1884, *F.C. Lehmann* 5028 (AMES, K, LE); Alto de las Cruces, collected by R. Escobar, A. Mejía et al., cultivated by M. & O. Robledo at La Ceja, 21 Sept. 1977, *R. Escobar* s.n. (JAUM); Caldas, Alto de San Miguel, Morro Gil, alt. 2450 m, 23 Nov. 1974, *Rodrigo Escobar et al.* s.n. (JAUM); Medellín, TV Station of Santa Helena, alt. 2700 m, 1966, *M. Ospina* 296 (JAUM); Cerro Padre Amaya, alt. 2300 m, collected by M. & O. Robledo et al., cultivated at La Ceja, 29 July 1972, *R. Escobar* 545 (JAUM). **Cauca:** San Antonio, "San José," alt. 2400-2700 m, 1 July 1922, *F.W. Pennell* 7592 (AMES); east of Moscopán, alt. 2400-2500 m, 2 Feb. 1947, *J. Cuatrecasas* 23646 (AMES, COL, F). **Tolima:** Río Cabrera, alt. 2300 m, 9 Jan. 1883, *F.C. Lehmann* 2365 (G); Tambo, between Uribe and Quebraditas, La Gallera, alt. 2200 m, collected by R. Escobar, cultivated at Colomborquídeas, 8 Nov. 1980, *R. Escobar* s.n. (JAUM). **Putumayo:** Valle del Sibundoy, alt. 2100-2200 m, collected by O. Ospina, cultivated in Sibundoy, 4 Mar. 1979, *R. Escobar* s.n. (JAUM).



ECUADOR: Carchi: terrestrial on the road embankment above Maldonado, alt. 2000 m, 25 Aug. 1978, *C. Luer, J. Luer & A. Hirtz* 3413 (SEL); east of the pass above Maldonado, alt. 2300 m, 17 Mar. 1991, *C. Luer, J. Luer, J. del Hierro, A. & X. Hirtz* 15141 (MO). **Imbabura:** Los Cedros Reserva, alt. 2100 m, Feb. 1993, *S. Dalström* 1938 (MO). **Pichincha:** Valley of Lloa, *W. Jameson* s.n. (K, W); terrestrial on the road embankment near Chiriboga, alt. 1600 m, 26 July 1967, *C.H. Dodson, N.H. Williams & R. Adams* 3822 (MO, SEL). **Morona-Santiago:** epiphytic in cloud forest east of Cuenca, collected by A. Andretta, cultivated in Cuenca, 26 Oct. 1982, *C. Luer* 8199 (SEL).

This large species is frequent in Colombia, becoming less frequent in Ecuador. It was first collected in the Eastern Cordillera of Colombia by the Belgian Jean Linden in 1842. The solitary flower is produced from a peduncle arising near or above the middle of the ramicaul. A large, inflated floral bract encloses the pedicel, ovary, and the bases of the sepals. The flowers are usually dark purple, but yellow flowers are not rare. The tails of the sepals are the longest of the subgenus. The tips of the petals are simply verrucose.

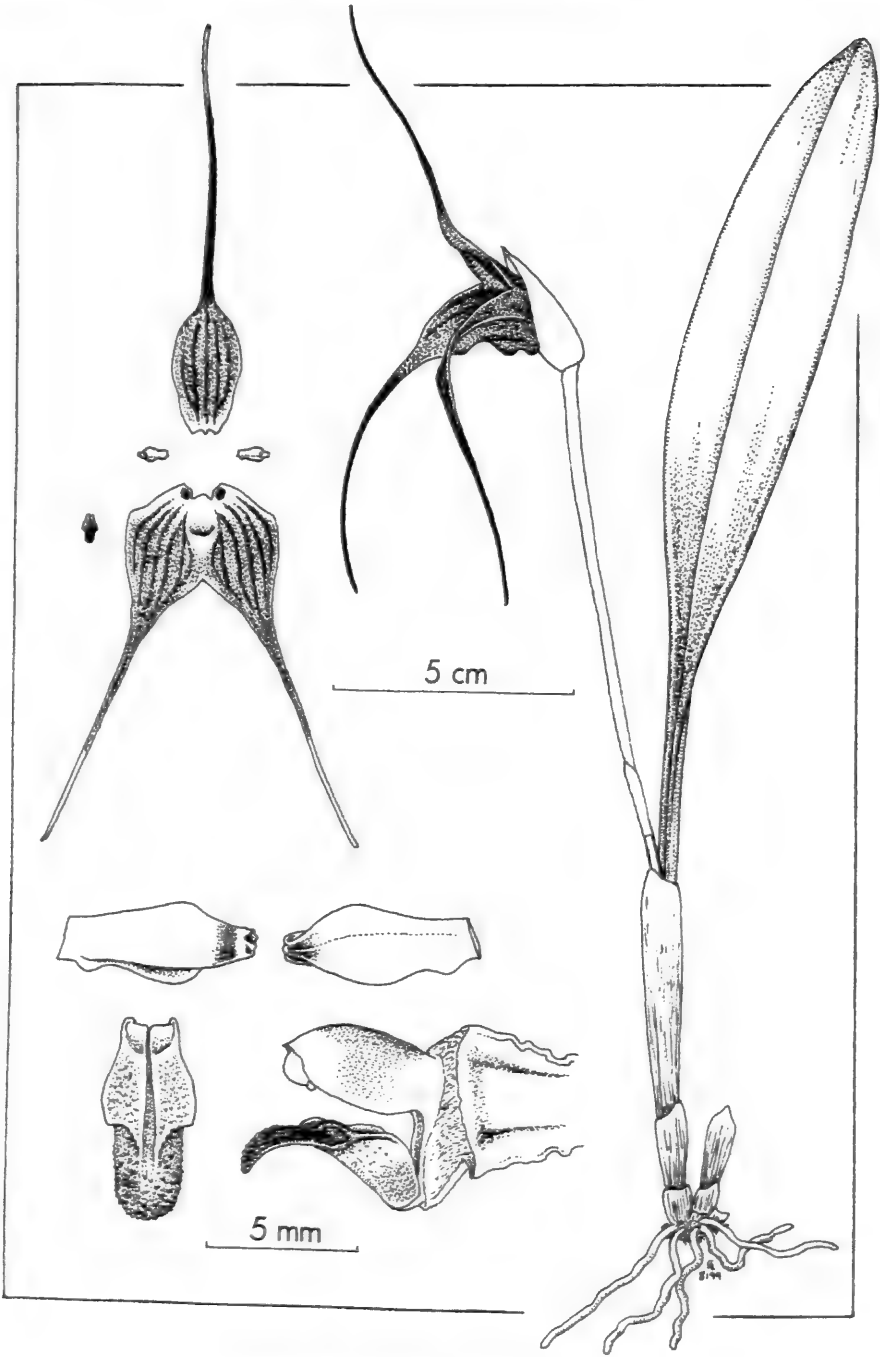


Plate 611. *Masdevallia cucullata*

Masdevallia delhierroi Luer & Hirtz, *Lindleyana* 8: 42, 1993.

Ety.: Named in honor of Juan del Hierro of Quito, Ecuador, discoverer of this species.

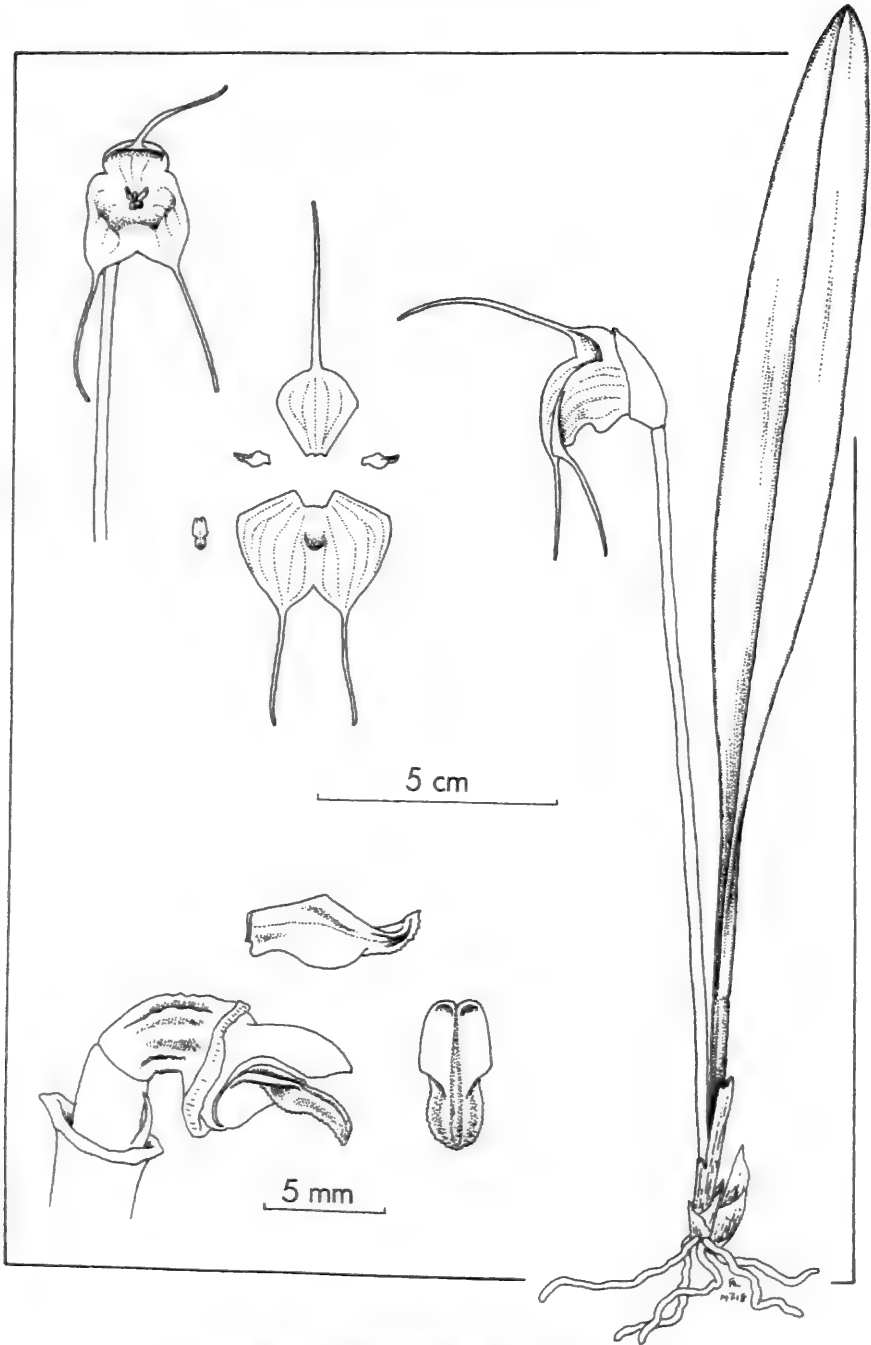
Plant large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 5-8 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, petiolate, 15-20 cm long including a petiole 2-3 cm long, the blade narrowly elliptical, subacute, 2-2.5 cm wide, narrowly cuneate below into the petiole. **Inflorescence** a single flower, borne by a stout, erect peduncle 12-15 cm long, with a bract near the base, from near the base of a ramicaul; floral bract inflated, broadly ovate, concave, 15-20 mm long, 15-18 mm wide expanded, enclosing the pedicel, ovary and lower portion of the flower; pedicel stout, 3 mm long; ovary stout, 5 mm long; **sepals** clear yellow, glabrous, smooth within, with the margins minutely erose, the dorsal sepal obovate, 19 mm long, 17 mm wide, connate to the lateral sepals for 12 mm to form a gaping, campanulate tube, the free portion rounded, abruptly contracted into a slender tail 3.5 cm long, the lateral sepals ovate, obtuse, oblique, 22 mm long, connate 18 mm into a lamina 32 mm broad expanded, the apices contracted into slender tails 22 mm long; **petals** orange, ovate, 7 mm long, 3 mm wide, the apex acute, thickened, verrucose, channeled, the labellar margin broadly dilated; **lip** yellow, orange at the apex, thick, oblong, 6 mm long, 3 mm wide, the oblique marginal folds near the middle, the apical half obtuse to rounded, minutely verrucose, the disc longitudinally channeled, the base subcordate, hinged beneath; **column** yellow, semiterete, 4.5 mm long, the foot stout, 3 mm long with a short, incurved extension.

ECUADOR: **Pastaza**: epiphytic in forest of Sacha Llanganatis, Río Zuñag, alt. 2600 m, March 1990, A. Hirtz, J. del Hierro, S. Dalström, L. Årnby, et al. 4718 (Holotype: MO), C. Luer illustr. 14718.

This large, yellow-flowered species from a remote area of east-central Ecuador is closely related to both *M. corniculata* and *M. vidua*. From them it is distinguished by the consistently pure yellow flowers with sepals that are smooth within. All three species are characterized by channeled, verrucose, and twisted apices of the petals.

From *M. corniculata* this species is distinguished by the larger flowers with less deeply connate sepals that are smooth internally, and borne by much longer peduncles. Yellow forms of *M. corniculata* are known to occur within populations with darkly colored flowers. From *M. vidua* this species is distinguished by the smaller, gaping flower with a proportionately shorter, inflated, sepaline tube.



Plate 612. *Masdevallia delhierroi*

Masdevallia hercules Luer & Andreetta, *Lindleyana* 3: 198, 1988.

Ety.: Named for the Greek mythological character Hercules, famous for his great strength.

Plant very large for the genus, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 8-22 cm long, enclosed by 2-3 long, inflated, tubular sheaths. **Leaf** erect, thickly coriaceous, elliptical, subacute, 15-28 cm long including the petiole 3-6 cm long, 3-6.5 cm wide, the base cuneate into the channeled petiole. **Inflorescence** a single flower borne by a stout, erect peduncle, 10-13 cm long, with a bract at the base, from above the middle of the ramicaul; floral bract green, inflated, cucullate, enclosing pedicel, ovary and the base of the flower, 2-2.5 cm long, 3-3.5 cm wide expanded; pedicels 4 mm long, 5 mm wide, with a filament 4 mm long; ovary 10 mm long, with 3 pairs of low, undulating ribs; **sepals** rigid, fleshy, yellow, heavily suffused with red-purple above the middle, with multiple purple veins below the middle, the dorsal sepal yellow, obovate, 42 mm long, 21 mm wide, connate to the lateral sepals for 23 mm to form a conical, sepaline tube, the free portion triangular with the subacute apex contracted into a yellow tail 4 cm long, the lateral sepals ovate, oblique, 35 mm long, connate to each other for 23 mm to form a broad, striate-rugose lamina 50 mm wide expanded, the acute apices contracted into yellow tails 3 cm long; **petals** white, purple along the apical margins, cartilaginous, oblong, obtusely angled on the upper margin, 7 mm long, 3.5 mm wide, the apex oblique, shortly papillose-denticulate; **lip** yellow, spotted with brown, thick, subpandurate, 8 mm long, 4 mm wide, with denticulate marginal folds above the middle, the epichile ovate, the apex rounded, fimbriate, minutely rugose-verrucose, the hypochile oblong, subcordate at the base, hinged beneath; **column** stout, light yellow with dark purple margins, semiterete, 8 mm long, the foot thick, 5 mm long, with an incurved extension.

ECUADOR: **Morona-Santiago**: Valle del Paute, alt. 2200 m, collected by A. Andreetta, M. Portilla & L. Morocho, cultivated at Paute, 17 Apr. 1988, *C. Luer 13256* (Holotype: MO).

COLOMBIA: **Huila**: Valley of Rio Cedro, southeast of Pitalito, alt. 1300 m, Jan. 1943, *R.E. Schultes & M. Villarreal 5219* (AMES).

This gigantic species has perhaps the largest vegetative parts of any species of the genus, but the flowers are not as large as those of the Colombian *M. elephanticeps*, *M. macrura*, or *M. pachysepala*. The first known collection of *M. hercules* was made by Richard E. Schultes in southeastern Colombia in 1943, but the specimen lay unidentified at AMES. The species was discovered in eastern Ecuador nearly a half century later.

The large, thickly rigid flower, thinly striped in dark purple and rugose within, is engulfed at the base by a foliaceous bract similar to that of related species. The erect lip with a fimbriate epichile can be seen within the deep but gaping sepaline cup. The tips of the petals are narrowed and papillose. The yellow sepaline tails are about as long as the blades.



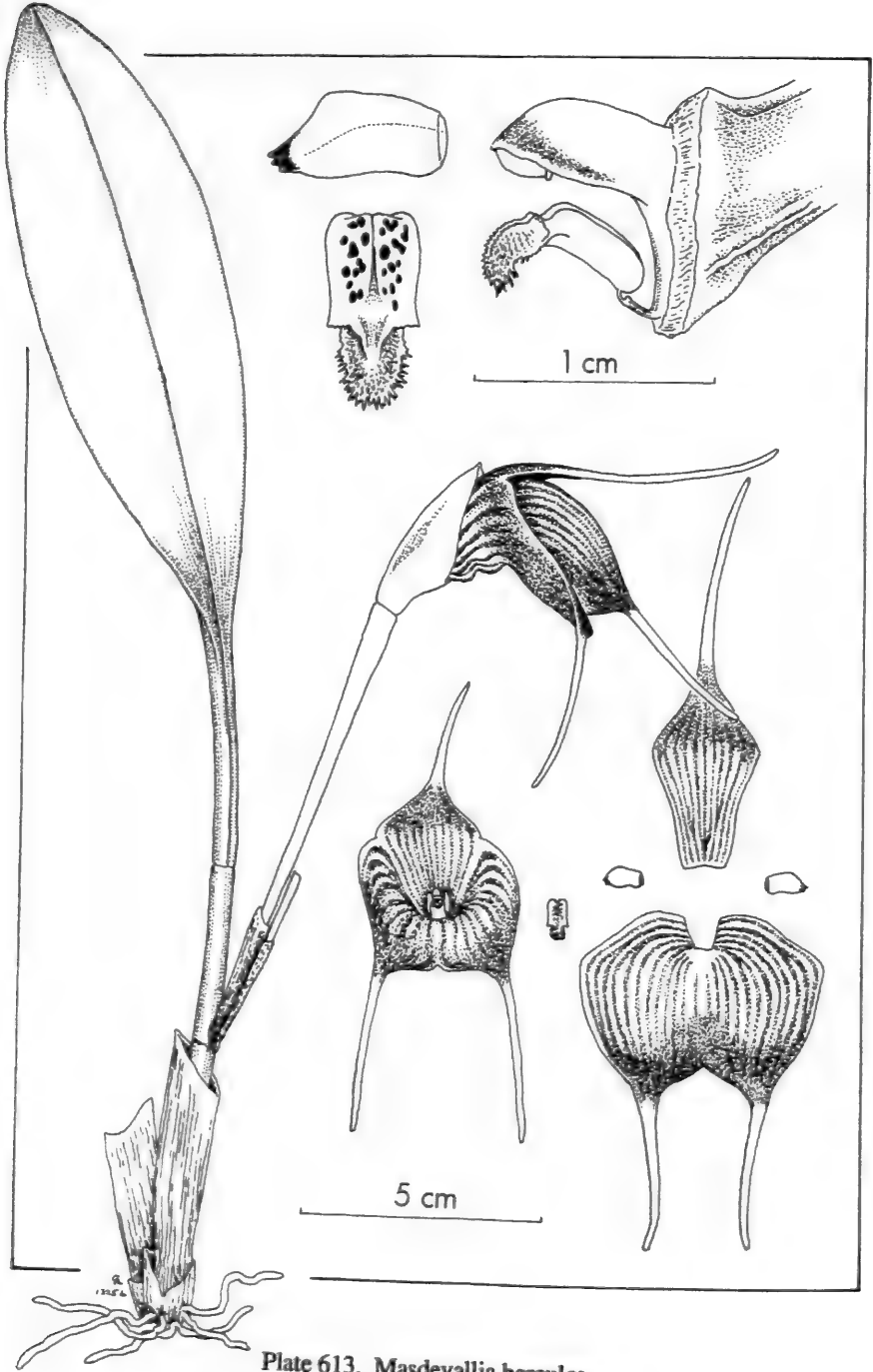


Plate 613. *Masdevallia hercules*

Masdevallia vidua Luer & Andreetta, Lindleyana: 3: 207, 1988.

Ety.: From the Latin *vidua*, "a widow," referring to the dark, hooded flower. The "widow" is a common name for *Masdevallia corniculata* and *Masdevallia cucullata* in Colombia where they are encountered relatively frequently.

Plant large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 3-5 cm long, enclosed by 2-3 inflated, tubular sheaths. **Leaf** erect, thickly coriaceous, elliptical-oblong, obtuse, 11-18 cm long including the petiole 2-4 cm long, 2-3.5 cm wide, the base cuneate into the channeled petiole. **Inflorescence** a single flower borne by a stout, erect peduncle, 10-19 cm long, with a bract at the base, from near the middle of the ramicaul; floral bract dark purple, inflated, cucullate, enclosing pedicel, ovary, and the base of the flower, 2 cm long, 2 cm wide expanded; pedicels 1.5 mm long, 3 mm wide, with a filament 2 mm long; ovary 7-10 mm long, with 3 pairs of low crests; **sepals** rigid, fleshy, subcarinate, deep purple, glabrous, the veins prominent within, the dorsal sepal oblong, 27 mm long, 16 mm wide, connate to the lateral sepals for 20 mm to form a conical, sepaline tube, the free portion triangular with the obtuse apex contracted into a dark purple tail 3.5 cm long, the lateral sepals ovate, oblique, 35 mm long, connate to each other for 27 mm to form a broad lamina 31 mm wide expanded, the acute apices contracted into dark purple tails 2.5 cm long; **petals** white, spotted with purple, cartilaginous, oblong, oblique, obtusely angled on the upper margin, 7.5 mm long, 3 mm wide, the apex orange, oblique, acute, curved upward, channeled, minutely verrucose; **lip** brown, spotted with darker brown, thick, subpandurate, 6 mm long, 3 mm wide, with marginal folds above the middle, the epichile oblong, obtuse, minutely rugose, denticulate, the hypochile oblong, concave, and subcordate at the base, hinged beneath; **column** stout, rose, suffused with dark purple, semiterete, 5 mm long, the foot thick, 3 mm long, with an incurved extension.

ECUADOR: **Morona-Santiago**: Cordillera del Cutucú, alt. 1800 m, collected by A. Andreetta & M. Portilla, cultivated at Paute, 16 May 1988, *C. Luer* 13370 (Holotype: MO; Isotypes: NY, QCNE); Cordillera del Cutucú, alt. 1400 m, collected by A. Andreetta & M. Portilla, Oct. 1983, cultivated at Paute, 16 Mar. 1984, *C. Luer* 9532 (MO).

Vegetatively, this coarse species is considerably larger than, but similar to two other species of the subgenus: *M. corniculata* and *M. delhierroi*. *Masdevallia vidua* was discovered by Padre Angel Andreetta and Mario Portilla in the Cordillera de Cutucú in eastern Ecuador, where it is apparently endemic.

The species is most similar to *M. delhierroi*, differing in larger, deep purple or purple-black flowers with a longer sepaline tube. In addition to these features, it also differs from *M. corniculata* by a much longer peduncle. The twisted, channeled apices of the petals are similar in all three species.



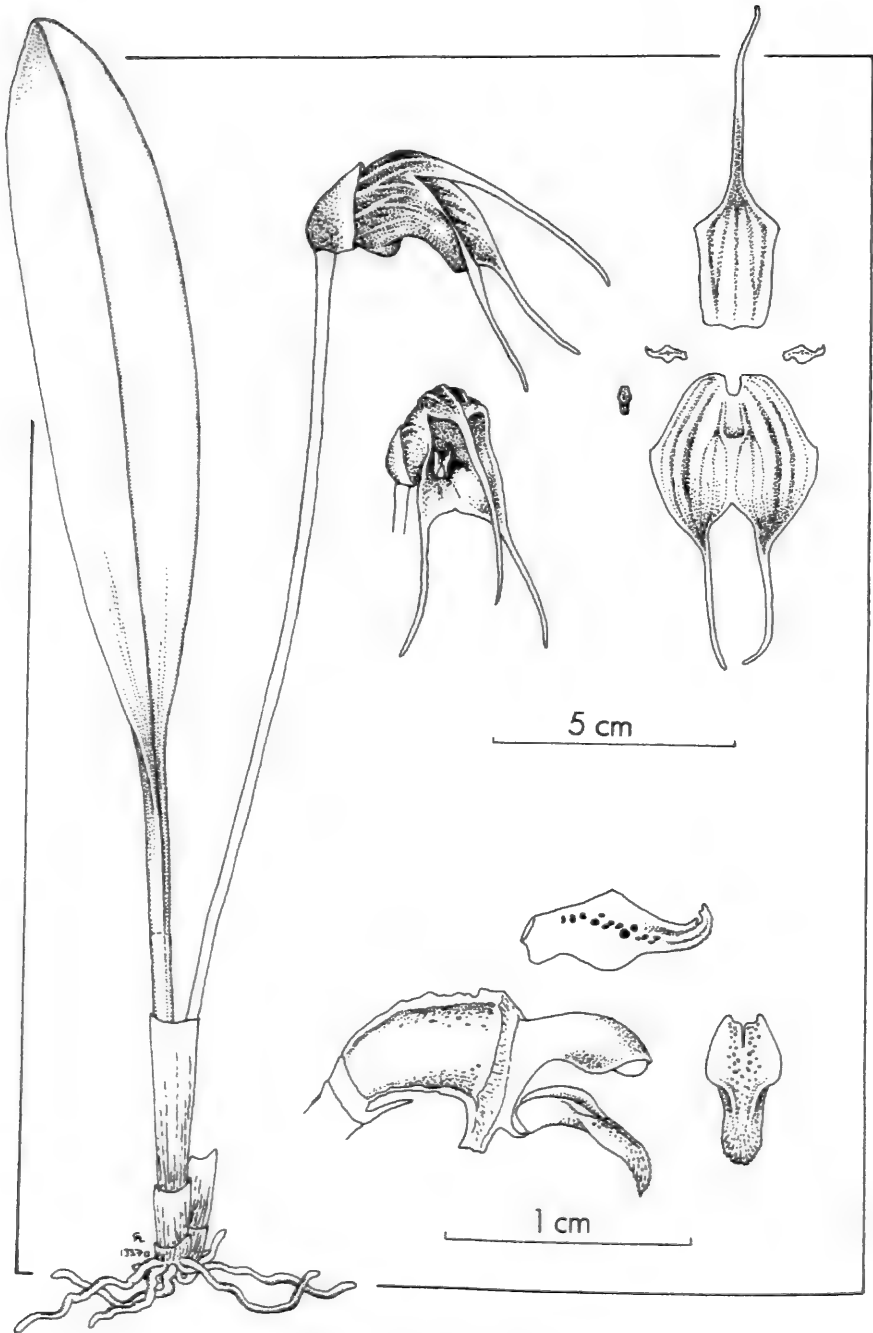


Plate 614. *Masdevallia vidua*

MASDEVALLIA SUBGENUS FISSIA

Reichenbach originally indicated *Fissae* as an unranked, infrageneric category for *Masdevallia falcago*, *M. picturata*, and *M. uncifera*, referring to the deeply cleft, or shallowly connate sepals of three species with otherwise very different characters. Being not closely related, either to *M. picturata* or to each other, *Masdevallia falcago* and *M. uncifera* are treated in subgenus *Masdevallia*.

Masdevallia subgenus *Fissia* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 77: 10, 2000.

Type: *Masdevallia picturata* Rchb.f.

Ety.: From the Latin *fissus*, "cleft," referring to the essentially free sepals.

Syn.: *Masdevallia* sect. *Fissae* Rchb.f., Otia Bot. Hamburgensia 1: 16, 1878.

Plants small to medium in size, caespitose; roots slender. Ramicauls erect, slender, abbreviated, with 2-3 loose, imbricating sheaths, the inflorescence emerging laterally from near the base. **Leaf** erect, coriaceous, narrowly obovate, subacute to obtuse, petiolate. **Inflorescence** a solitary flower, borne by an erect, slender peduncle, round in cross section, with a bract near or at the base; floral bract inflated, enclosing the pedicel and ovary; pedicel short; ovary with markedly tortuous lamellae; **sepals** membranous, colorful, glabrous, free from each other or barely connate at the base, acute to obtuse, caudate or ecaudate; **petals** cartilaginous, callous on the labellar margin, producing a rounded process above the base, the apex sharply tridentate; **lip** oblong, with marginal folds that divide the lip into an epichile and a hypochile, the base subtruncate, hinged on the end to a short extension from the column-foot; **column** semiterete, the anther ventral, shortly hooded, the stigma ventral, the base of the column developed into a column-foot with the apex of the ovary.

Based on *M. picturata*, the subgenus *Fissia* is characterized vegetatively by a small and densely caespitose habit with narrowly linear or narrowly obovate leaves. The peduncles are slender, terete, and single-flowered. The ovaries are deeply tortuous-undulate. The sepals are essentially free from each other. Although long-caudate in *M. picturata*, the sepals are tailless in the other two species of the subgenus. The petals are callous on the labellar margin with the apex sharply tridentate. The lip is oblong and obtuse, with marginal folds near the middle that divide the lip into an epichile and a hypochile.

The criteria of a single-flowered inflorescence, free sepals, and a divided lip are not accommodated in another subgenus of *Masdevallia*. In addition, the tortuous-lamellate ovary is distinctive.

BINOMIALS IN *MASDEVALLIA* ATTRIBUTED TO SUBGENUS *FISSIA*

- M. cryptocopis* Rchb.f. ex Kraenzl. = **M. picturata**
M. meleagris Lindl. sensu Rchb.f. = **M. picturata**
M. mutica Luer & EscobarPlate 615.
M. ocanensis Kraenzl. = **M. picturata**
M. picturata Rchb.f.Plate 616.
M. picturata Rchb.f. var. *minor* Cogn. = **M. picturata**
M. picturata Rchb.f. subsp. *minor* (Cogn.) Luer = **M. picturata**.....Plates 617, 618.
M. pleurothalloides Luer.....Plate 619.

KEY TO THE SPECIES

- 1 Sepals with tails *M. picturata*
 1' Sepals tailless 2
- 2 Floral bract tubular, shorter than the pedicel; lateral sepals acute.....
 *M. pleurothalloides*
 2' Floral bract inflated, longer than the pedicel; lateral sepals obtuse.....
 *M. mutica*

Masdevallia mutica Luer & Escobar, *Orquideología* 13: 88, 1978.

Ety: From the Latin *muticus*, "with a point, tailless," in allusion to the very abbreviated or absent tails.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1-1.5 cm long, enclosed by 2 thin, tubular sheaths. **Leaf** erect, coriaceous, narrowly obovate, acute to subacute, 4-8 cm long including a petiole 2-3 cm long, 0.7-0.9 cm wide, gradually narrowed below into the slender, blackish petiole. **Inflorescence** a solitary flower, borne by a slender, erect peduncle 5-10 cm long, with a bract above the base, from low on the ramicaul; floral bract inflated, 8 mm long, enclosing the pedicel and ovary; pedicel 1.5-6 mm long; ovary 2-4 mm long, with undulating crests; **sepals** translucent white to light yellow-green with purple spots, with microscopically ciliate margins, otherwise glabrous, the dorsal sepal ovate, acute to subacute, 10-14 mm long, 5-6 mm wide, 3-veined, free from the lateral sepals, the lateral sepals suffused with orange toward the base, oblong, oblique, subacute to obtuse, 12-15 mm long, 4.5 mm wide, 3-veined, connate 1 mm at the base; **petals** yellow-white, oblong, 5-5.5 mm long, 2-2.5 mm wide, the apex sharply tridentate, the labellar margin with an obtuse process above the base and continuing onto the blade of the petal; **lip** yellow, suffused and mottled with red, thick, oblong-subpandurate, 7-8 mm long, 3 mm wide, the sides with oblique folds above the middle, the apex obtuse with a callus, the disc sulcate between longitudinal calli that continue forward to the apex, the base subcordate with the lobes concave, hinged beneath; **column** green, suffused with purple along the margins, semiterete, 5 mm long, the foot 2-3 mm long, with a short, incurved extension.



COLOMBIA: Without collection data, flowered in cultivation by M. & O. Robledo at La Ceja, 17 Feb. 1975, *R. Escobar 1483* (Holotype: JAUM); same collection, flowered in cultivation by M. & O. Robledo at La Ceja, 16 Oct. 1977, *C. Luer 2051* (clonotype: SEL). **Risaralda:** San José del Palmar, Alto de Los Galápagos, alt. 2000 m, collected by E. Valencia, Sept. 1990, cultivated at Colomborquídeas, 5 May 1993, *C. Luer 16717* (MO). **Valle del Cauca:** El Cairo, Cerro de Inglés, Serranía de los Paraguas, alt. 2260-2300 m, 3 Jan. 1987, *P. Silverstone-Sopkin et al. 2923* (CUVC, MO), *C. Luer* illustr. 19315.

Masdevallia mutica is uncommon in the Western Cordillera of Colombia. Although allied to *M. picturata*, this species is most closely allied to the tailless Panamanian *M. pleurothalloides* from lower altitudes. The two species are separated only by several minor features. The leaves and pedicels of *M. mutica* are twice longer; the floral bract is inflated and encircling a much shorter, abbreviated pedicel and ovary; the sepals are longer and twice as broad, with the apices of the laterals being obtuse instead of acute; and the lip is thick with cavities in the basal lobes of the lip.

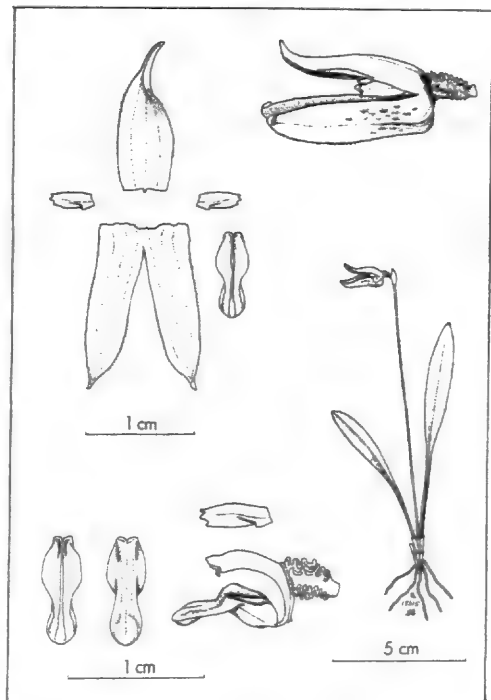


Plate 615A. *Masdevallia mutica*

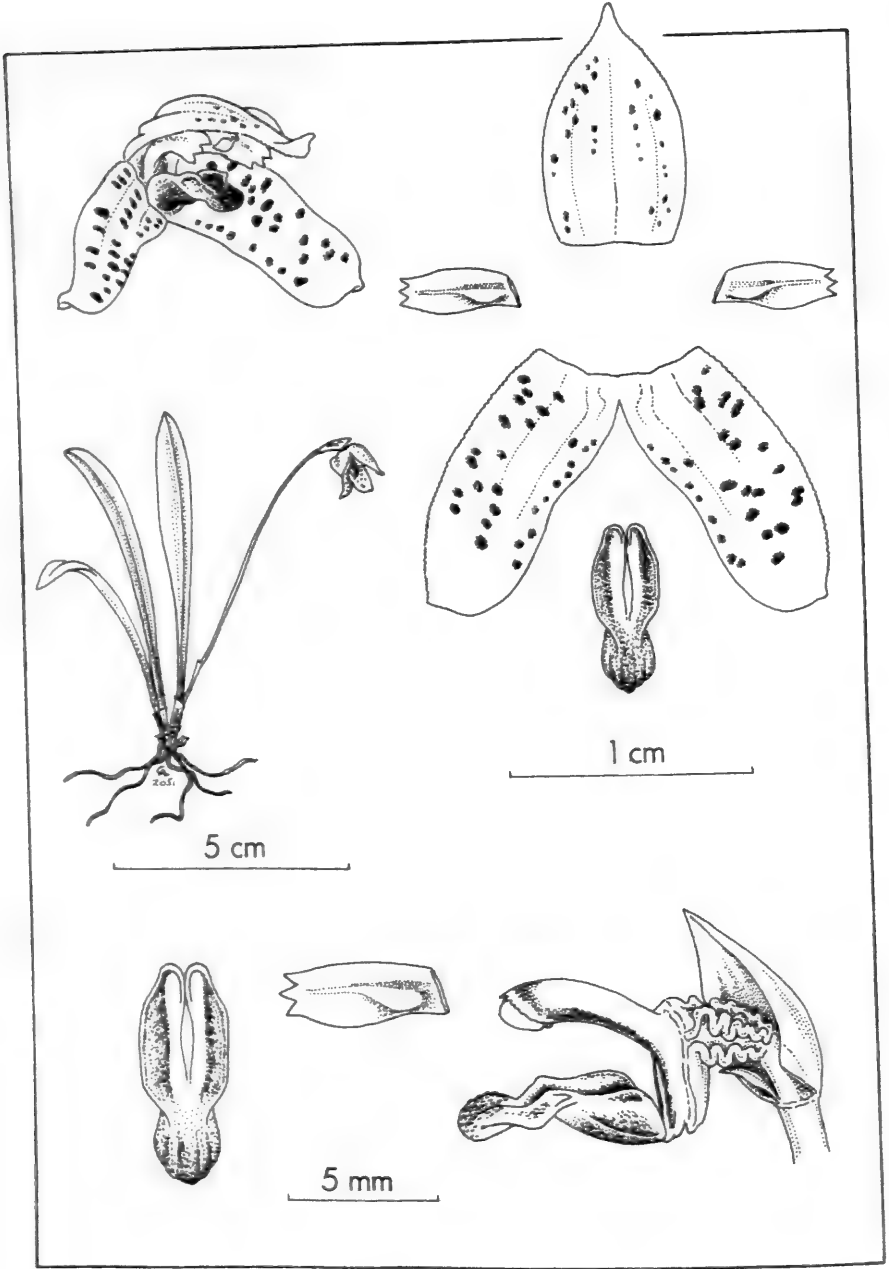


Plate 615. *Masdevallia mutica*

Masdevallia picturata Rchb.f., *Otia*, Bot. Hamburgensia 1: 16, 1878.

Ety.: From the Latin *picturatus*, "painted," referring to the multicolored flowers.

Syn.: *Masdevallia meleagris* Lindl. sensu Rchb.f., *Xenia Orch.* 1:198, 1858, non Lindl.

Ety.: From the Latin *meleagris*, "a peacock," in allusion to the colorful flowers.

Syn.: *Masdevallia picturata* Rchb.f. var. *minor* Cogn., *Fl. Bras.* 3(4): 329, 1896.

Ety.: From the Latin *minor*, "lesser," referring to the smaller habit.

Syn.: *Masdevallia ocanensis* Kraenzl., *Repert. Spec. Nov. Regni Veg.* 18: 429, 1921.

Ety.: Named for the community of Ocaña where the species was collected.

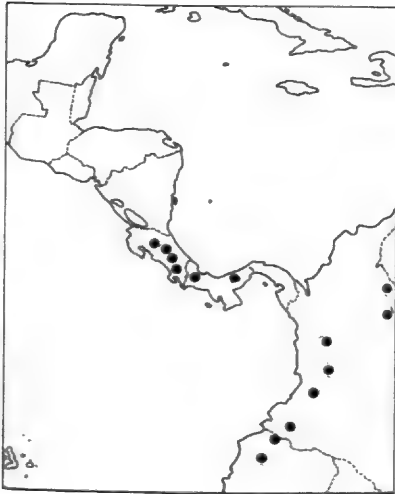
Syn.: *Masdevallia cryptocopis* Rchb.f. ex Kraenzl., *Repert. Spec. Nov. Regni Veg. Beih.* 34: 128, 1925.

Ety.: From the Greek *cryptocopis*, "a hidden kitchen knife," referring to the petals.

Syn.: *Rodrigoa cryptocopis* (Kraenzl.) Braas, *Die Orchidee* 30: 220, 1979.

Syn.: *Masdevallia picturata* subsp. *minor* (Cogn.) Luer, *Monogr. Syst. Bot. Missouri Bot. Gard.* 16: 12, 1986.

Plant small to medium in size, epiphytic to terrestrial, caespitose; roots slender. Ramicauls slender, blackish, erect, 2-20 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, 2-7.5 cm long including a petiole 1-2 cm long, 0.3-1.1 cm wide, the blade narrowly elliptical or narrowly obovate, obtuse to subacute, gradually narrowed below into the indistinct petiole. **Inflorescence** a solitary, colorful flower produced by a slender, erect peduncle 3-10 cm long, with a bract near the base, from low on the ramicaul; floral bract 6-10 mm long; pedicel 4-6 mm long; ovary 2-4 mm long, with 6 irregular, markedly tortuous, undulating lamellae; **sepals** white, sometimes faintly tinged with yellow or green, irregularly spotted with purple, the subacute apices contracted into filiform, white, green or purple tails 2-7 cm long, the margins of the sepals minutely erose, especially toward the bases, the dorsal sepal free, ovate, 8-12 mm long, 4-7 mm wide, the lateral sepals bright orange toward the bases, oblong, oblique, 8-15 mm long, 3.5-5 mm wide, connate 1-3 mm to form a short mentum; **petals** white to greenish or yellowish white, sometimes suffused with orange, elliptical, 5-7 mm long, 1.5-2 mm wide, the apex tridentate with the middle tooth elongated, the labellar margin with an obtuse, flattened callus extending from above the base to near the middle; **lip** yellow, flecked or suffused with brown or purple, ovate to subpandurate, 5-9 mm long, 1.5-4 mm wide, with obtuse marginal folds near the middle, the apical half or epichile oblong, obtuse, the basal half or hypochile dilated, obovate, shallowly sulcate centrally, the base subcordate, hinged beneath; **column** greenish white to orange, marked with purple or brown, semiterete, 4-6 mm long, the foot 1.5-2 mm long with a short, incurved extension.



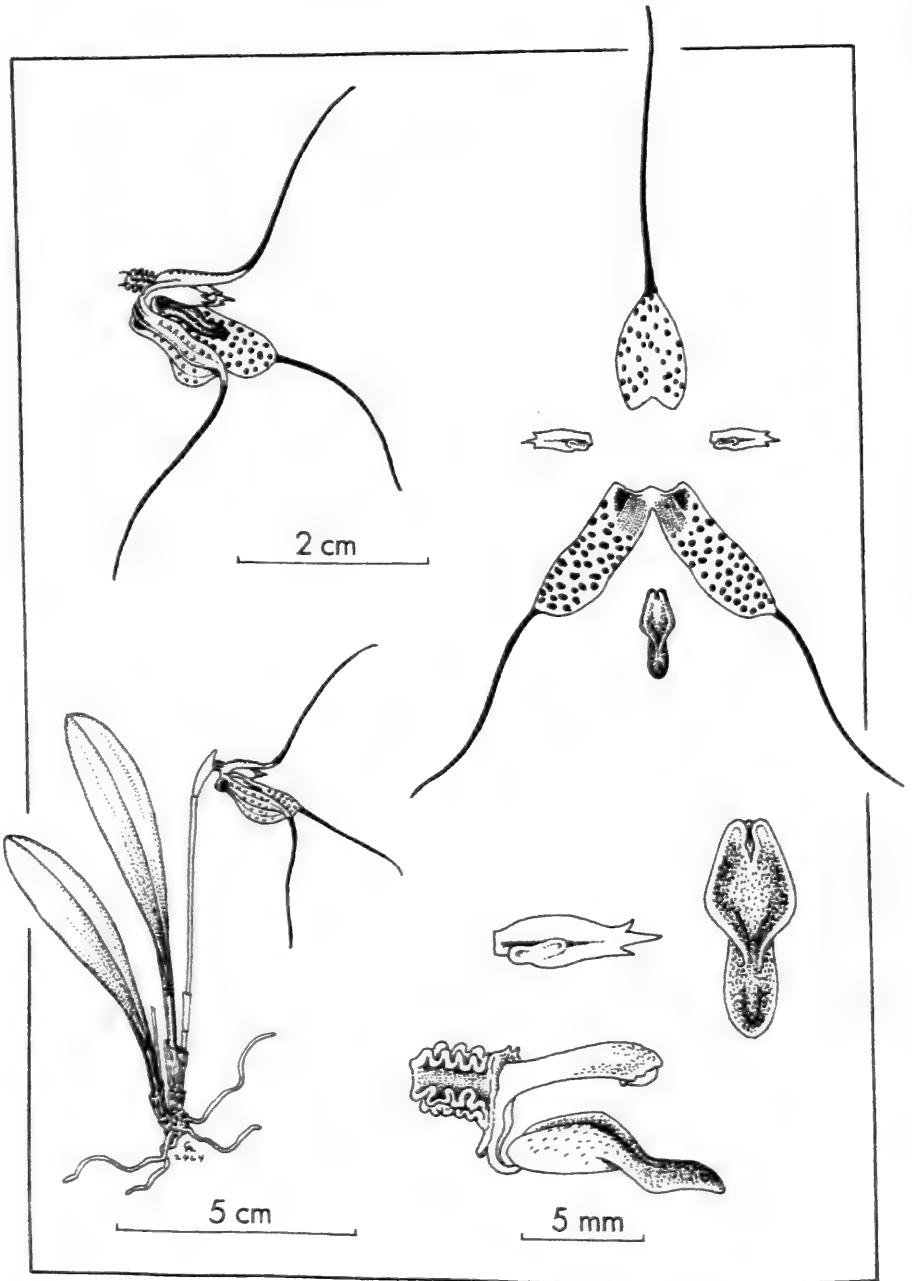


Plate 616. *Masdevallia picturata*

- VENEZUELA: near Caracas, alt. 6,000 ft., July 1850, *H. Wagenser s.n.* (Holotype: W). **Aragua:** Colonia Tovar, 1854-1857, *A. Fendler 1363* (AMES, BR, G, K, MO); Caracas, *H. Karsten s.n.* (W). **Bolivar:** Ptari-tepui, alt. 1800 m, 4 Nov. 1944, *J.A. Steyermark 59812* (AMES, VEN); Ilu-tepui, alt. 2550 m, 20 Mar. 1952, *B. Maguire 33517* (AMES, NY); Auyán-tepui, alt. 1660 m, 12 May 1964, *J.A. Steyermark 93774* (AMES, NY). **Táchira:** between Fundación and Las Cruces, alt. 1700 m, 15 May 1951, *J. Renz 7001* (BAS); road from Las Delicias to Regonbalia, alt. 1900 m, 2 Sept. 1951, *J. Renz 7315* (BAS).
- GUYANA: Mt. Roraima, Mt. Roraima Expedition, Oct.-Jan. 1884-1885, *G.S. Jenman & E.F. im Thurn 279* (BM, K); Mt. Roraima, alt. 3,500 ft., 1898, *F.V. McConnell & J.J. Quelch 904* (K).
- COSTA RICA: **Alajuela:** Viento Fresco, alt. 1600-1900 m, 13 Feb. 1926, *P.C. Standley & R. Torres 47728* (AMES). **Cartago:** above Tobósí, alt. 5,250-5,500 ft., 1867, *A. Endres 503* (W); Aguas Calientes, alt. 1500 m, 5 Jan. 1882, *F.C. Lehmann 1076* (BR); La Estrella, 9 Jan. 1923, *C.H. Lankester 422* (AMES); hills south of Cartago, June 1923, *C.H. Lankester 473* (AMES). **Heredia:** Vara Blanca, alt. 1680 m, Apr. 1938, *A.F. Skutch 3758* (AMES); Cerro de Las Lajas, north of San Isidro, alt. 2000-2400 m, 7 Mar. 1925, *P.C. Standley & J. Valerio 51481, 51498, 51552* (AMES); Cerro de las Caricias, north of San Isidro, alt. 2000-2400 m, 11 Mar. 1926, *P.C. Standley & J. Valerio 52354* (AMES); Yerba Buena, northeast of San Isidro, alt. 2000 m, 22 Feb. 1926, *P.C. Standley & J. Valerio 49070, 49170, 49249* (AMES); above Tablón, alt. 1930 m, 21 July 1983, *R. Escobar, L.D. Gómez & R. Alfaro 3042* (CR, SEL); above San Cristóbal Norte, alt. 1780 m, 26 Mar. 1995, *C. Luer, J. Luer, J. Atwood & Dora Mora de Retana 17482* (MO). **San José:** Zurquí, alt. 2000-2500 m, 13 Feb. 1926, *P.C. Standley & J. Valerio 48034, 48061* (AMES); La Carpintera, alt. 1700 m, 28 Mar. 1984, *M.W. Chase 84401* (CR); Tablazo, alt. 1500 m, 17 Mar. 1978, *C. Todzia 192* (CR).
- PANAMA: **Chiriquí:** Cerro Hornito, north of Gualaca, alt. 2238 m, 26 July 1975, *S. Mori & A. Bolten 7465* (MO); Cerro Hornito, alt. 1700 m, 15 Dec. 1976, *C. Luer, A. Luer, R. Dressler, N. Williams 1365* (SEL).
- COLOMBIA: **Norte de Santander:** Ocaña, *Bruchmüller s.n.* (holotype of *M. ocanensis*: W); Perico, alt. 6,000 ft., Jan. 1878, *Kalnbreyer 602* (holotype of *M. cryptocopis*: W); near Agua de la Virgin, west of Ocaña, alt. 1650 m, *C. Luer, R. Escobar & D. Portillo 7698* (AMES, MO, SEL). **Santander:** between Santa Bárbara and Guaca, alt. 2850 m, 14 May 1982, *C. Luer & R. Escobar 7868* (SEL); Alto de Santa Inéz, alt. 2250 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10334* (MO); west of Velez, toward Landazuri, alt. 2500 m, 4 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10102* (MO). **Boyacá:** between Duitama and Virolin, alt. 2300 m, 1 June 1982, *C. Luer, R. Escobar & D. Portillo 8048* (AMES, SEL). **Cundinamarca:** Aguadita, between San Miguel and Fusagasuga, alt. 1900 m, 8 June 1941, *J. Renz 3582* (BAS); north of San Miguel, alt. 2800 m, 10 Aug. 1941, *J. Renz 3573* (BAS); Monte Redondo near Quetame, alt. 1700 m, 16 Dec. 1950, *M. Schneider 427* (S). **Antioquia:** without collection data, *Patin s.n.* (W); without collection data, *G. Schmidchen s.n.* (W); Río Negro, La Ceja, alt. 1700-2200 m, *F.C. Lehmann 7024* (AMES, K, LE); El Retiro, Hda. Normandía, alt. 2500 m, 2 Mar. 1956, *M. Ospina H. 68* (AMES, COL); Quirama, Río Negro, alt. 2100 m, 13 July 1973, *R.E. Schultes s.n.* (AMES); Cocomá, Quebrada El Biadal, alt. 1830 m, 20 Nov. 1983, *A. Juncosa 1362* (MO); Río Cocomá, alt. 1900 m, 2 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10085* (MO); above Miraflores dam, alt. 2050 m, 15 May 1985, *C. Luer, R. Escobar & E. Valencia 11367* (MO); TV antenna, east of Santo Domingo, alt. 2170 m, 12 May 1985, *C. Luer, R. Escobar & E. Valencia 11347* (MO); Urrao, Parque Nacional Natural "Las Orquídeas," confluencia de los ríos Polo y Calles, alt. 1380 m, 26 Mar. 1988, *A. Cogollo, J.G. Ramírez & O. Alvarez 2616* (JAUM, MO); Caramanta, Vereda Barroblanco, alt. 2400 m, 14 Oct. 1988, *J. Betancur, F.J. Roldán & I. Castaño 982* (JAUM, MO); Caldas, La Corrala, Finca La Zarza, alt. 2440 m, 24 May 1985, *L. Albert de Escobar & J.R. Giraldo 5269* (JAUM, MO); Támesis, Río Frío, alt. 2100 m, 9 Nov. 1989, *R. Fonnegra et al. 3225* (JAUM, MO); La Ceja, copper mine above La Ceja, alt. 2400 m, 16 Apr. 1988, *C. Luer, J. Luer & R. Escobar 13191* (MO); Yarumal, road to El Cedro, alt. 1850 m, 15 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14169* (MO); between Concordia and Betulia, alt. 2100 m, 29 May 1995, *C. Luer, J. Luer & R. Escobar 17627* (MO). **Risaralda:** above Sta. Rosa de Cabal, alt. 2080 m, 19 Nov. 1985, *J. Wolf & A. DeWilde 2029* (COL, SEL). **Caldas:** between Manizales and Termales del Ruiz, alt. 2500 m, 4 Apr. 1956, *J. Renz 8574* (BAS). **Tolima:** Río Cabrera, alt. 2000 m, 10 Jan. 1883, *F.C. Lehmann 2344* (BR, G). **Valle del Cauca:** Tocotá, Río de Salado, alt. 1600-1800 m, 10 Mar. 1883, *F.C. Lehmann 2732* (holotype of var. *minor*: BM; isolecotypes: BR, G); El Tambo, alt. 2000 m, 3 May 1883, *F.C. Lehmann 2787* (G); west of Cali, alt. 1800 m, 21 Apr. 1885, *F.C. Lehmann 4309* (G); highlands of Popayán, alt. 1600-1800 m, Oct. 1901, *F.C. Lehmann 7011, B.T. 178, 179* (AMES, K, W); El Tambo, alt. 1700 m, 21 Nov. 1934, *K. von Sneider 122* (AMES, S); Morro Pelado, alt. 2270-2320 m, 17 Oct. 1944, *J. Cuatrecasas 18171* (AMES). **Nariño:** Ricaurte, La Planada, alt. 1900 m, 28 Nov. 1976, *Olga de Benevides 732* (MO, PSO).
- ECUADOR: **Carchi:** epiphytic in cloud forest between Tulcán and Maldonado, alt. 1950 m, 2 Apr. 1984, *C. Luer, S. Dalström & T. Højjer 9916* (MO); east of the pass east of Maldonado, alt. 2300 m, 17 Mar. 1991, *C. Luer, J. Luer, J. del Hierro, A. & X. Hirtz 15155* (MO). **Pichincha:** Río Topo, alt. 1600 m, May 1984, *A. Hirtz 1752* (MO). **Morona-Santiago:** Tumbes, alt. 1800-1900 m, Mar. 1992, *S. Dalström 1941* (MO); Cordillera del Condor, east of Chuchumbleta, alt. 1750 m, *C. Luer, A. Hirtz, W. Flores, A. Andretta & W. Teague 13574* (MO). **Zamora-Chinchipe:** "Loja," *A. Hübsch* (W); epiphy-

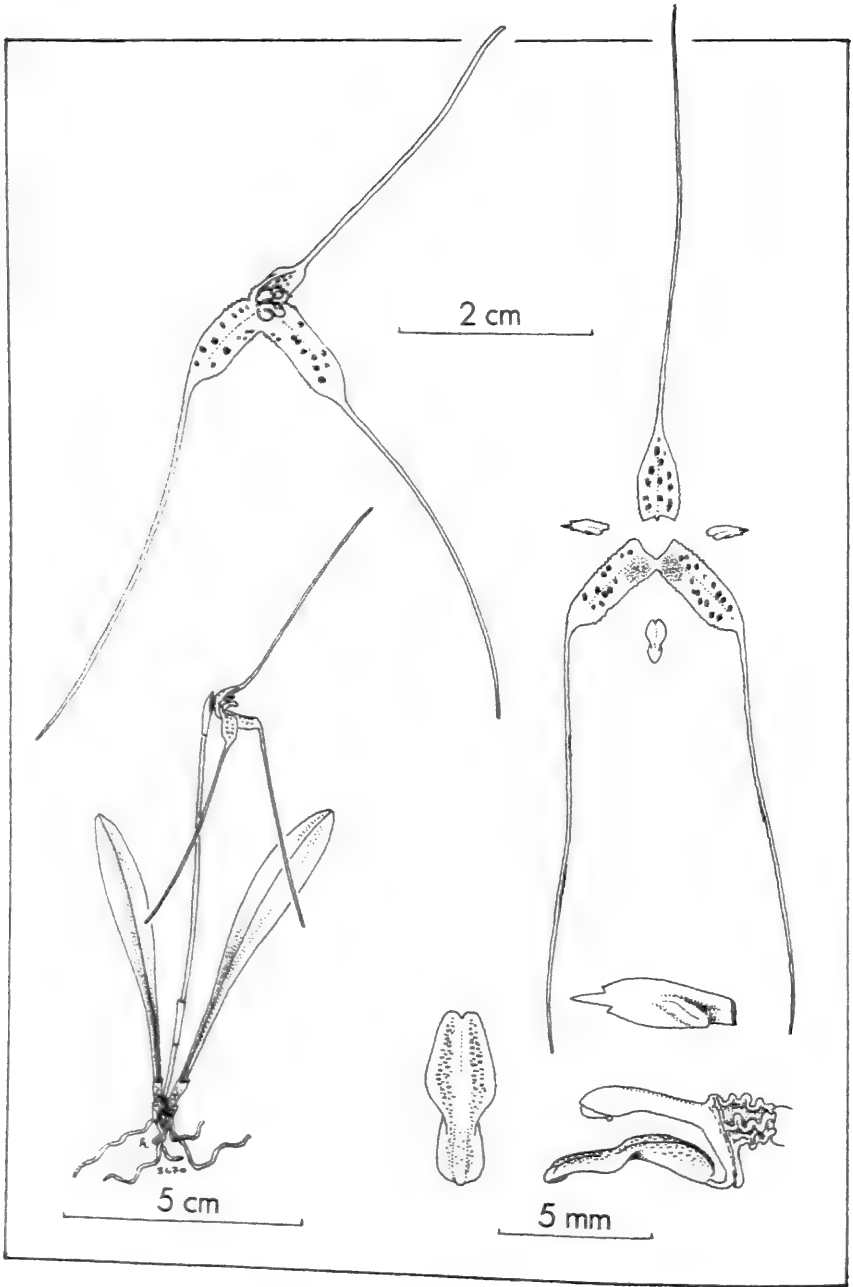


Plate 617. *Masdevallia picturata*
(*subsp. minor*)

tic in scrub cloud forest between Loja and Zamora, alt. 2750 m, 21 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 10732* (MO); cloud forest south of Yangana, alt. 2700 m, 23 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 10829* (MO); Nudo de Sabanilla, between Yangana and Valladolid, alt. 2800-2900 m, 5 Apr. 1985, *G. Harling & L. Andersson 23714* (GB).

PERU: **Junín**: Huassahuasi, alt. 3000 m, collected by J. Meza, flowered in cultivation in Munich, Germany, 15 May 1980, by *W. Königer s.n.* (SEL). **Huánuco**: Diez Canesco, alt. 2450 m, *M. Arias A-43a* (SEL, USM). **Pasco**: Oxapampa, between Villarica and Cacazu, alt. 1200 m, 24 Apr. 1991, *D. Bennett 5058* (MO).

BOLIVIA: **La Paz**: Sud Yungas, Río Unduavi, alt. 2450 m, 6 Feb. 1980, *C. Luer, J. Luer & R. Vásquez 5198* (SEL). **Cochabamba**: Chapare, road to Tablas, alt. 1800 m, Feb. 1980, *C. Luer, J. Luer & R. Vásquez 5219* (SEL).

This little species is greatly variable in size in its wide distribution through Central America and the Andes of South America. It is one of the most common and widely distributed species of the genus. Although abundant in some areas, it is uncommon in others. The variations are too inconstant and too numerous to name. The type at W (Vienna) is a watercolor painting of the large variation usually seen at higher altitudes. Smaller variations grow abundantly either epiphytically or terrestrially, often on the clay embankments of road cuts, and either in full sun or full shade.

The species is characterized by the caespitose habit with a distinctive flower with essentially free, white, purple-spotted, long-tailed sepals that form an orange mentum with the column-foot. The smaller, less colorful, longer-tailed variations often found at lower altitudes have been segregated into subspecies *minor*. The larger, more colorful variations with proportionately shorter tails included in the typical species are often found in cold, wet forests at higher altitudes. The ovary is covered by tortuous, undulating carinae. The petals are sharply tridentate at the apex. The shallowly sulcate lip is divided into an epichile and hypochile by obtuse marginal folds near the middle.

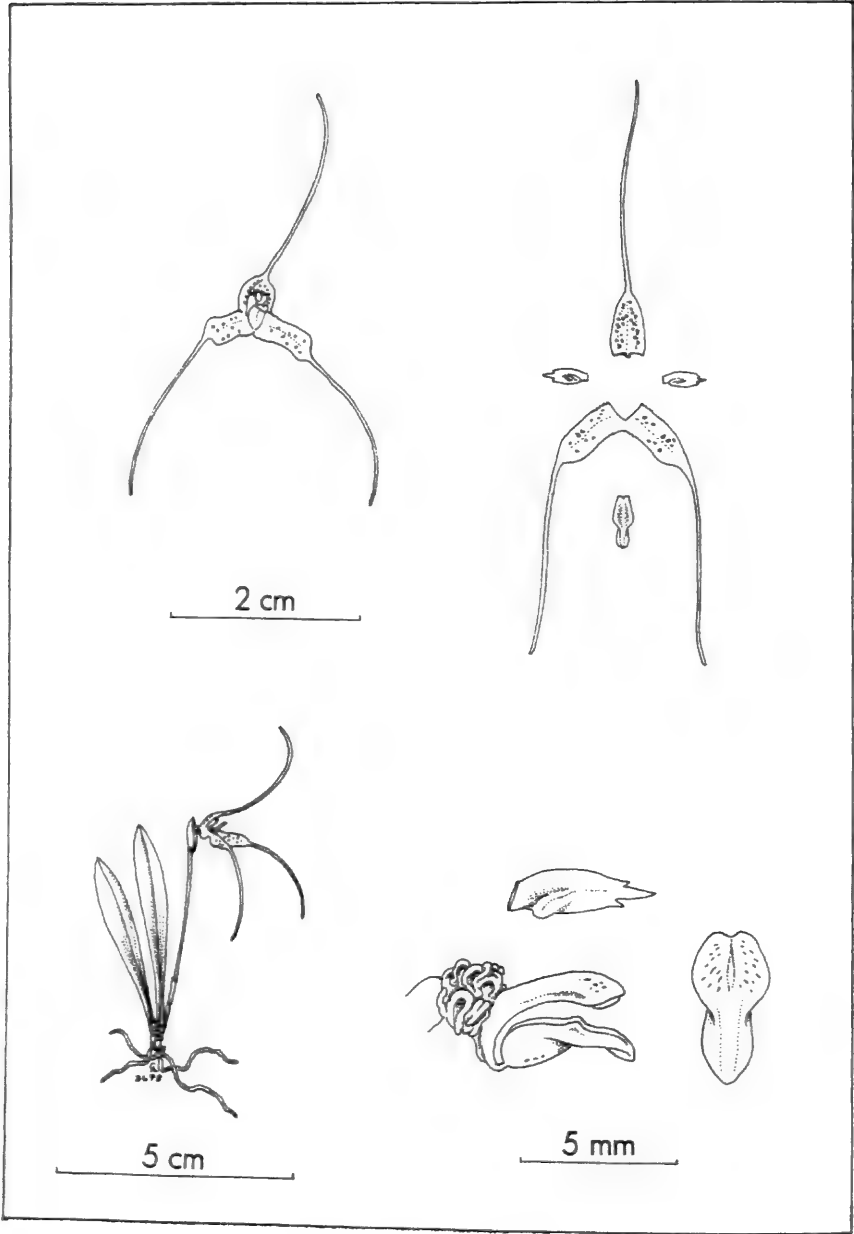


Plate 618. *Masdevallia picturata*
(*subsp. minor*)

Masdevallia pleurothalloides Luer, *Selbyana* 3: 218, 1976.

Ety: Named for the superficial resemblance of the flower to a flower of the genus *Pleurothallis*.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-7 mm long, enclosed by 2 thin, tubular sheaths. **Leaf** erect, coriaceous, narrowly obovate, subacute, 1.5-3.5 cm long including an indistinct petiole, 4-8 mm wide, gradually narrowed below into the subpetiolate base. **Inflorescence** a solitary flower, borne by a slender, erect peduncle 3 cm long, with a bract above the base, from low on the ramicaul; floral bract tubular, 3 mm long; pedicel 4 mm long; ovary 1.5 mm long, with undulating crests; **sepals** translucent pale yellow or pale orange, irregularly spotted with light brown, with microscopically ciliate-erose margins, otherwise glabrous, the dorsal sepal narrowly ovate, acute, 9.5 mm long, 3.5 mm wide, 3-veined, free from the lateral sepals, the lateral sepals with thickened, bright orange patches toward the base, oblong, oblique, acute, 9.25 mm long, 2.5 mm wide, 3-veined, barely connate at the base; **petals** white, oblong, unguiculate, 4 mm long, 1 mm wide, the apex sharply tridentate, the labellar margin with a rounded, retrorse process above the base and continuing onto the blade of the petal until it disappears near the apex; **lip** bright orange with red flecks below the middle, narrowly oblong-subpandurate, 6 mm long, 1.8 mm wide, the sides with oblique folds above the slightly narrowed middle, the apex narrowly rounded between low calli that extend forward from the folds, the disc shallowly sulcate between the marginal folds, the base subcordate, hinged beneath; **column** green, slender, semiterete, 4 mm long, the foot 2 mm long, with a short, incurved extension.

PANAMA: **Panamá:** epiphytic in cloud forest on Cerro Jefe, alt. 1000 m, 12 Nov. 1967, R.L. Dressler 3155 (Holotype: SEL); same area, collected 2 Mar. 1976, flowered in cultivation 25 Nov. 1976, C. Luer, J. Luer & P. Taylor 1281 (SEL); same area, near antenna, alt. 900 m, 30 Dec. 1987, G. McPherson 11925 (MO); same area, collected by A. Maduro and E. Olmos, 23 Nov. 2001, cultivated in Wilmington, DE by M. Rao 121 (MO).



This species is closely related to the common and variable *M. picturata*. The tailless sepals, the most obvious differentiating feature, are essentially free from each other. The acutely tridentate petals and the lip with marginal folds are very similar to those of *M. picturata*.

Masdevallia pleurothalloides is apparently endemic in the wet forested hills east of Panama City. Superficially, it appears very similar to sympatric species of *Pleurothallis* such as *P. brighamii* S. Watson or *P. fulgens* Rchb.f. It is most closely allied to the Colombian *M. mutica*, but it is best distinguished from the latter by the acute, instead of obtuse, apices of the lateral sepals, and a slender, tubular floral bract that encloses the pedicel, instead of inflated and enclosing the pedicel and the ovary.

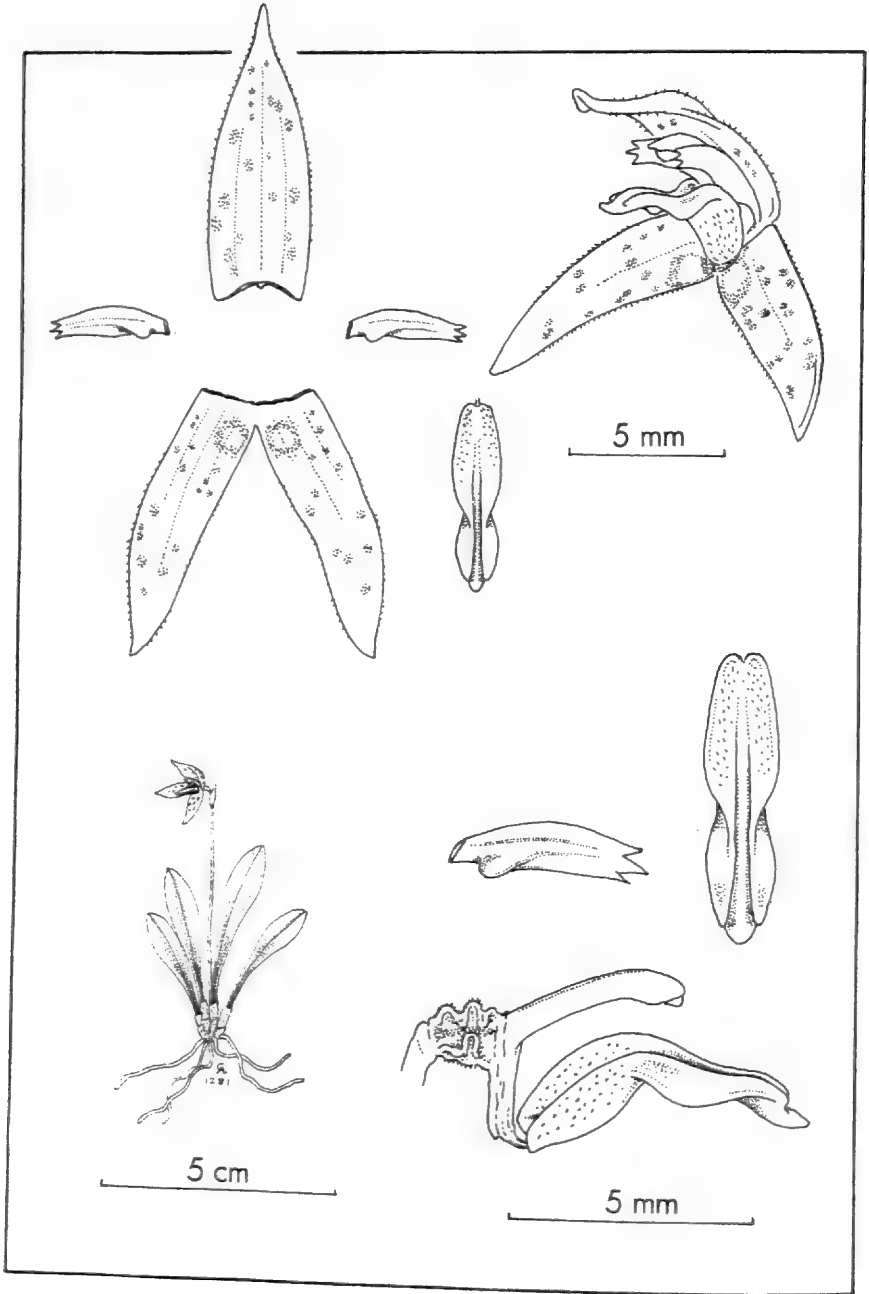


Plate 619. *Masdevallia pleurothalloides*

MASDEVALLIA SUBGENUS MELEAGRIS

The first species attributable to this subgenus was described by Professor Lindley in 1845 as *M. meleagris* from a Colombian collection by Hartweg. The only other species from the nineteenth century, *M. heteroptera* and *M. fasciata*, were added by Reichenbach in 1875 and 1881 respectively. Both were collected presumably near Medellín, but, as with most early collections, localities are vague. These two species are similar and closely allied; they were treated as one species in *Thesaurus Masdevalliarum*. The remaining seven species were added in the twentieth century.

The ten species known today constitute a well-defined taxon treated as a subgenus of *Masdevallia*. All the species grow epiphytically in wet forests at high or relatively high altitudes in the Andes of Colombia, Ecuador, Peru and Bolivia. Braas proposed the genus *Rodrigoa* for them in 1979, but all the species meet critical criteria for the genus *Masdevallia* including the most specific: callous petals and a lip hinged to a free extension of the column-foot.

SUBGENUS MELEAGRIS

Masdevallia subgen. *Meleagris* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 16: 51, 1986.

Type: *Masdevallia meleagris* Lindl., Ann. Mag. Nat. Hist. ser. 1, 15: 257, 1845.

Ety.: From the Latin, or the Greek *meleagris*, "a guinea-fowl, or a peacock," referring to the colorfully banded flowers.

Syn.: *Rodrigoa* Braas, Die Orchidee 30: 203, 1979.

Ety.: Named in honor of Rodrigo Escobar R. of Medellín, Colombia, who sent specimens to Braas.

Plants very small to large, weak to robust, caespitose to shortly or long-repent; roots few to many, slender to coarse or fleshy. Ramicauls ascending to erect, rarely descending, slender to stout, shorter than the leaf, partially or completely enclosed by 2-3 imbricating sheaths, the inflorescence emerging laterally from near the base or near the middle. **Leaf** erect in relation to the ramicaul, thinly to thickly coriaceous, elliptical to narrowly elliptical or obovate to narrowly obovate, the apex acute, obtuse to rounded, shallowly notched at the apex, the base broadly to narrowly cuneate into a petiole. **Inflorescence** a solitary flower, or a successively few-flowered raceme, lax or congested, longer or shorter than the leaf, the peduncle slender to stout, short or long, round in cross section, shaggy-scabrous in one species, with 1-3 bracts; floral bract thin; pedicel slender to stout, longer or shorter than the floral bract; ovary smooth, carinate to verrucose, trivalvate with the ribs smooth to carinate; **sepals** membranous to thickly fleshy, variously colored, smooth to verrucose or pubescent within, broad to narrow, acute to obtuse, variously connate above the base into a cup or tube, usually with the apices contracted into tails that are rarely subclavate; **petals** thin to cartilaginous, usually longitudinally callous, with or without producing a process or tooth on the labellar half or margin, at or above the base; **lip** thin to thick, simple, oblong, ovate to obovate, the apex acute, obtuse to rounded, smooth to verrucose, with or without a callus, entire or denticulate, the disc smooth or with a pair of longitudinal calli, the base truncate to cordate, hinged on the end or beneath; **column** semiterete, the anther ventral, more or less hooded, the apical margins of the column entire to lightly toothed, the rostellum retrorse, the pollinia 2, the stigma ventral, the base of the column developed into a column-foot with the apex of the ovary, with an incurved extension to which the lip is attached.

The subgenus *Meleagris* is characterized by relatively thin, coriaceous leaves with the petiole distinctly conduplicate. The slender peduncle, round in cross section, commonly ascends in the groove. A few, successive flowers are borne in a lax

raceme. The dorsal sepal is essentially free from the lateral sepals, similar to that of *M. picturata*. The lateral sepals are connate to each other at the base where the blades are deflexed from a shallow cup beneath the free tip of the column-foot. The petals are variously callous along the labellar margin, and the lip is delicately hinged beneath by a thin strap to the extension of the column-foot.

* * *

The status of *M. bathyschista* is not clear. It appears to belong to *M.* subgenus *Meleagris*, but the true identity of the species will never be known. The type-specimen, a collection by the mysterious collector Madero, was destroyed at Berlin-Dahlem in 1945, and no isotype is known. It is my guess that it is another collection of *M. fasciata* with which Schlechter was apparently unfamiliar. Between 1921 and 1925, Kränzlin gave *M. fasciata* still three more names, comparing two of the specimens to *M. picturata*.

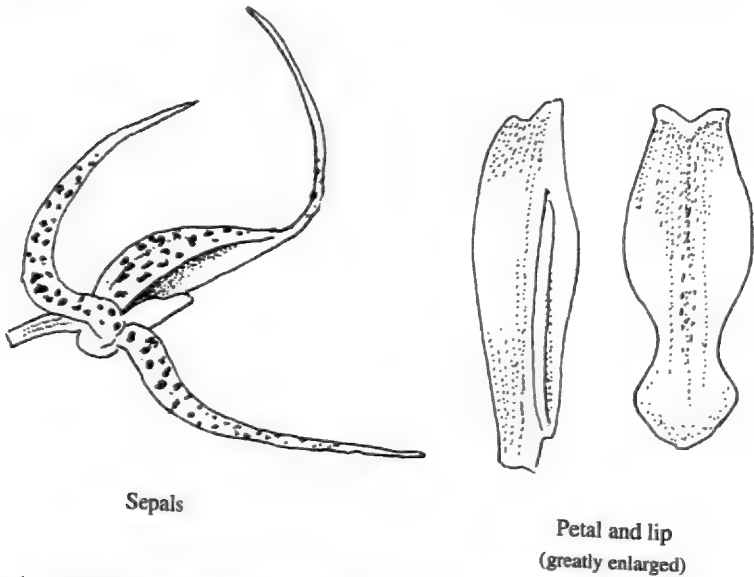
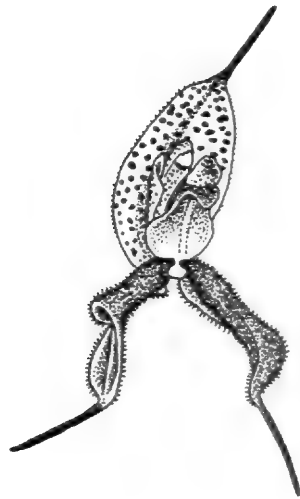


Fig. 1. Copy of the drawing of the floral parts of *Masdevallia bathyschista* by Schlechter published posthumously by Mansfeld in the *Figuren-Atlas zu den Orchideenfloren der südamerikanischen Kordillierenstaaten*, Repert. Spec. Nov. Regni Veg. Beih. 57: t. 25, Nr. 94, 1929.

BINOMIALS IN *MASDEVALLIA* ATTRIBUTED TO
SUBGENUS *MELEAGRIS*

<i>M. alexandri</i> Luer.....	Plate 620.
<i>M. anisomorpha</i> Garay.....	Plates 621, 622.
<i>M. bathyschista</i> Schltr. = <i>M. fasciata</i> ?	
<i>M. diversifolia</i> Kraenzl. = <i>M. parvula</i>	
<i>M. fasciata</i> Rchb.f.	Plate 623.
<i>M. fissa</i> Kraenzl. = <i>M. heteroptera</i>	
<i>M. heteroptera</i> Rchb.f.	Plate 624.
<i>M. hortensis</i> Luer & Escobar.....	Plate 625.
<i>M. meleagris</i> Lindl.	Plate 626.
<i>M. milagroï</i> Luer & Hirtz	Plate 627.
<i>M. palmensis</i> Kraenzl. = <i>M. fasciata</i>	
<i>M. pantomima</i> Luer & Hirtz	Plate 628.
<i>M. parvula</i> Schltr.	Plates 629, 630.
<i>M. planadensis</i> Luer & Escobar	Plate 631.
<i>M. restrepioides</i> Kraenzl. = <i>M. fasciata</i>	
<i>M. segurae</i> Luer & Escobar	Plate 632.
<i>M. trinemoides</i> Kraenzl. = <i>M. fasciata</i>	
<i>M. ximenaë</i> Luer & Hirtz.....	Plate 633.



KEY TO THE SPECIES

- 1 Sepals with tails about as long as or shorter than the blade2
 1' Sepals with tails longer than the blade8
- 2 Blade of the dorsal sepal 18-20 mm long, blades of the lateral sepals 15-16 mm long.....3
 2' Blade of the dorsal sepal 7-11 mm long, blades of the lateral sepals 8-12 mm long.....4
- 3 Dorsal sepal with small spots, lateral sepals coarsely pubescent; lip 10 mm long....
 *M. heteroptera*
 3' Dorsal sepal with large spots, lateral sepals minutely pubescent; lip 6 mm long.....
 *M. pantomima*
- 4 Dorsal sepal with the tail thickened-subclavate.....*M. milagroii*
 4' Dorsal sepal with the tail not subclavate5
- 5 Dorsal sepal with the apex broadly obtuse with the margin thickened.....
 *M. anisomorpha*
 5' Dorsal sepal with the apex subacute, without the margin thickened6
- 6 Lateral sepals sparsely pubescent with long, capitate hairs.....*M. segurae*
 6' Lateral sepals microscopically densely pubescent7
- 7 Sepals spotted; petals obtuse; lip broadest at the base.....*M. parvula*
 7' Sepals unspotted; petals acute; lip with the apex broadly recurved, as wide as the base.....
 *M. planadensis*
- 8 Petals with the apex acute, decurved; lip widest at the apex.....*M. meleagris*
 8' Petals with the apex acute to obtuse, not decurved; lip not widest at the apex.....9
- 9 Sepals with large, marginal spots, with tails 10-12 mm long; petals acute
 *M. ximenae*
 9' Sepals with multiple, small bars or dots, with tails more than 20 mm long.....10
- 10 Dorsal sepal concave, enclosing the petals and lip, with the tails of the sepals not acutely reflexed
 *M. alexandri*
 10' Dorsal sepal shallowly concave, with the petals and lip exposed, with the tails of the sepals reflexed11
- 11 Dorsal sepal with a callus at the base of the dorsal sepal; petals bidentate.....
 *M. hortensis*
 11' Dorsal sepal without a callus at the base of the dorsal sepal; petals acute.....
 *M. fasciata*

Masdevallia alexandri Luer, *Phytologia* 46: 347, 1980.

Ety.: Named in honor of Alexander C. Hirtz of Quito, Ecuador, co-discoverer of this species.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, ca. 1 cm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** suberect, thinly coriaceous, petiolate, 4-8 cm long including the 1.5-3 cm long petiole, the blade elliptical, acute, 1.5-2 cm wide, the base cuneate into the slender, channeled petiole. **Inflorescence** a congested, successively few-flowered raceme, borne by a slender, erect peduncle 8-9 cm long, with a bract near the middle, embraced below by the conduplicate base of the leaf, from low on the ramicaul; floral bracts thin, tubular, imbricating, 5-6 mm long; pedicel 7 mm long; ovary 3 mm long; **sepals** light greenish brown with multiple, minute bars of dark brown, glabrous, the dorsal sepal suborbicular, concave, 7 mm long, 6.5 mm wide, connate to the lateral sepals for 1 mm to form a gaping, shallow cup, the rounded free portion abruptly contracted at the apex into a slender, erect, brown tail ca. 25 mm long, the lateral sepals light yellow-brown toward the bases, obovate-oblong, 9 mm long, 3 mm wide, essentially free but connate to the column-foot to form a round mentum, then deflexed, the obtuse apices contracted into tails similar to that of the dorsal sepal; **petals** yellow-green, suffused and marked with brown, oblong-multangular, 4 mm long, 2 mm wide, the dilated, obtuse apex shortly apiculate, the lower half with a longitudinal carina ending in a rounded lobule at the base; **lip** brown, oblong-subpandurate, arcuate, 4 mm long, 2.25 mm wide expanded, the apex rounded, the disc with a low pair of calli above the middle, the base subcordate, thinly hinged beneath the thickened base to the under margin of the apex of the column-foot; **column** yellow, dotted with purple-brown, semiterete, 3.5 mm long, with an equally long, curved column-foot.

ECUADOR: **Pichincha**: epiphytic in cloud forest above Mindo, alt. 2200 m, 20 Oct. 1979, A. Hirtz & A. Andreetta s.n. (Holotype: SEL), C. Luer illustr. 4374; same collection, flowered in cultivation by A. Andreetta at Paute, 24 May 1988, C. Luer 13642 (MO); above Mindo, alt. 2000 m, 6 Dec. 1984, A. Hirtz 2151 (MO); road to Mindo, alt. 1500 m, Aug. 1990, A. Hirtz, X. Hirtz & J. del Hierro 4922 (MO).

This species is locally frequent where it is apparently restricted to a small area of cloud forest on the western declivity of central Ecuador. It is related to the widely distributed *M. parvula*, but *M. alexandri* is distinguished from it and the other members of the subgenus by the brown, glabrous sepals with long, slender tails.

The rounded dorsal sepal is marked with minute, transverse bars of dark brown on a greenish background. The tail is produced abruptly and it is held erect. The free parts of the lateral sepals fold downward beyond the small, sepaline cup, in which the petals, column and lip stand together erect.



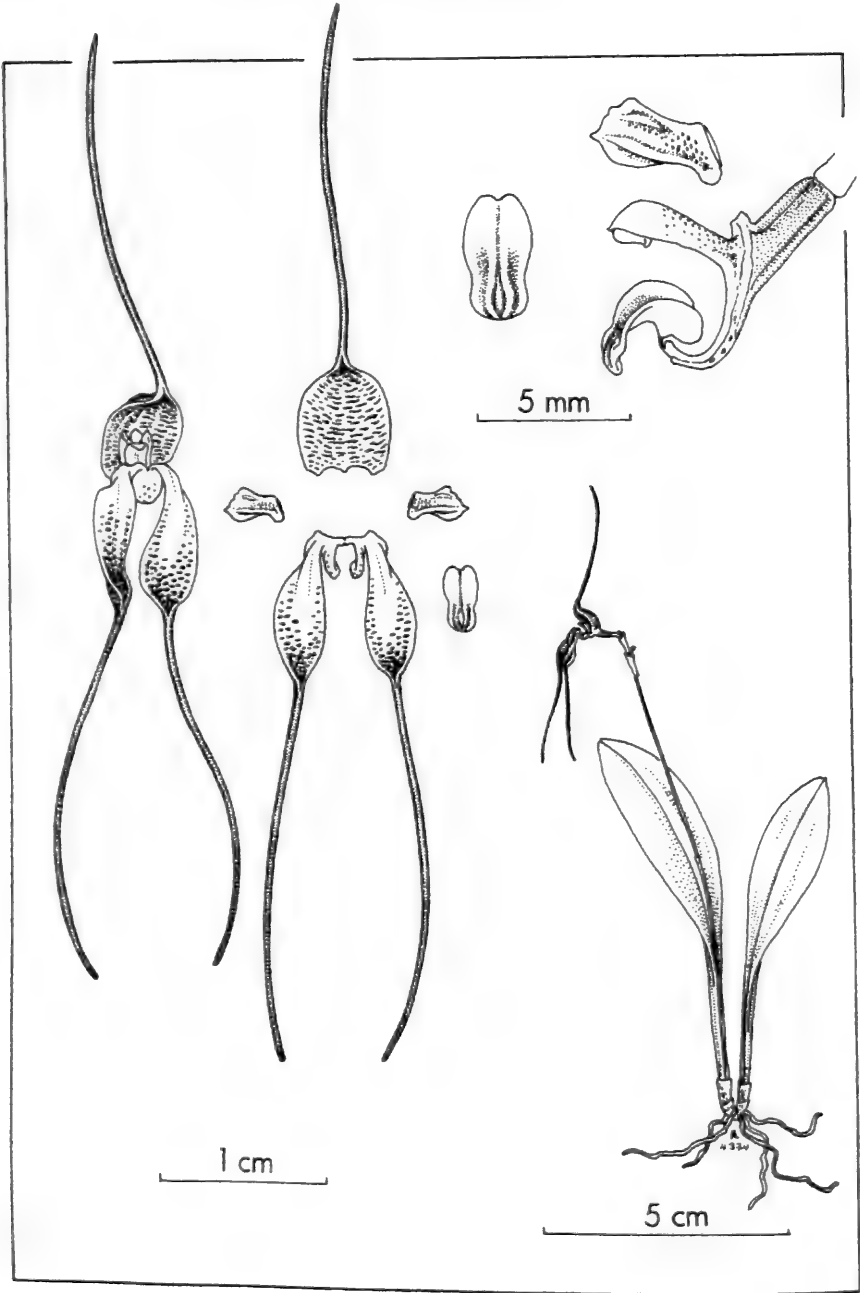


Plate 620. *Masdevallia alexandri*

Masdevallia anisomorpha Garay, *Orquideología* 5: 79, 1970.

Ety.: From the Greek *anisomorpe*, "of a different shape," possibly referring to the unusual shapes of the sepals.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1-2.5 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, 3-11 cm long including the petiole 1-3.5 cm long, the blade elliptical-obovate, subacute to obtuse, 1-2.5 cm wide, cuneate below into the petiole. **Inflorescence** a congested, successively few-flowered raceme, up to 1 cm long, borne by a slender, erect peduncle 6-12 cm long, with a tubular bract below the middle, from near the base of the ramicaul; floral bracts imbricating, 5-6 mm long; pedicel 6-11 mm long; ovary 3 mm long, undulate-winged; **sepals** light yellow to green, suffused and spotted with purple, shortly pubescent, the dorsal sepal ovate, 8-9 mm long, 5.5-7 mm wide, free from the lateral sepals, the apex purple-black, minutely verrucose-pubescent, abruptly expanded and broadly truncate, 4 mm broad, abruptly contracted into a stout, more or less reflexed, terete tail, 7-10 mm long, the lateral sepals oblong, ovate, oblique, obtuse, 8-12 mm long, 3 mm wide, connate basally for about 1 mm to form a shallow, rounded mentum with the column-foot, the apices contracted into stout, terete, yellow tails 6-10 mm long; **petals** light yellow, spotted with purple, oblong, 5 mm long, 2 mm wide, the apex subtruncate, shallowly notched, the labellar margin with a low, longitudinal callus; **lip** yellow, dotted with red-brown, thick, ovate-trilobed, 4 mm long, 3.5 mm wide, the apex narrowly rounded, the lateral angles or lobes obtuse, incurved, the disc with a low, inconspicuous pair of longitudinal calli, the base subtruncate, hinged beneath; **column** light yellow-green, spotted with purple, semiterete, 4 mm long, the foot 4 mm long with a thick, incurved extension.

COLOMBIA: **Antioquia**: near Medellín, *G. Escobar R. 446* (Holotype: AMES); same collection, flowered in cultivation by M. & O. Robledo at La Ceja, 13 Oct. 1977, *C. Luer 2015* (SEL); Yarumal, epiphytic in cloud forest, Ratón Pelado, collected by R. Escobar, flowered in cultivation at Colomborquídeas, 20 Nov. 1981, *C. Luer 6735* (SEL); same area, alt. 2650 m, 1 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10047* (MO); Santa Rosa, Río Labores, alt. 2700 m, collected by E. Valencia, flowered in cultivation at Colomborquídeas, 10 Apr. 1988, *C. Luer 13152* (MO).

This species occurs locally in cool, wet, scrub forests higher than 2500 meters above sea level in the northern part of the Central Cordillera of Colombia. It was first discovered by the late Gilberto Escobar of Medellín, a well-known authority on the orchids of Colombia. *Masdevallia heteroptera* grows intermixed with this species. A photograph of *M. anisomorpha* is misidentified as *M. heteroptera* in *Die Orchidee* 30: 218, 1979.

The apex of the dorsal sepal is the most distinguishing character of this species. The greenish blade, variously spotted with dark purple, is constricted just below the expanded, truncate apex. From the center of the transverse, blackened, puberulent-verrucose apex the stout tail emerges. The dorsal sepal is essentially free from the lateral sepals, and they are free from each other beyond the mentum made with the column-foot.

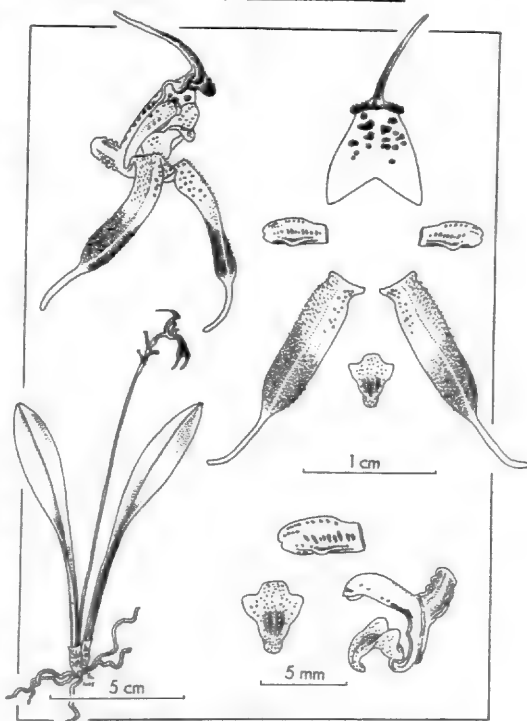


Plate 621. *Masdevallia anisomorpha*

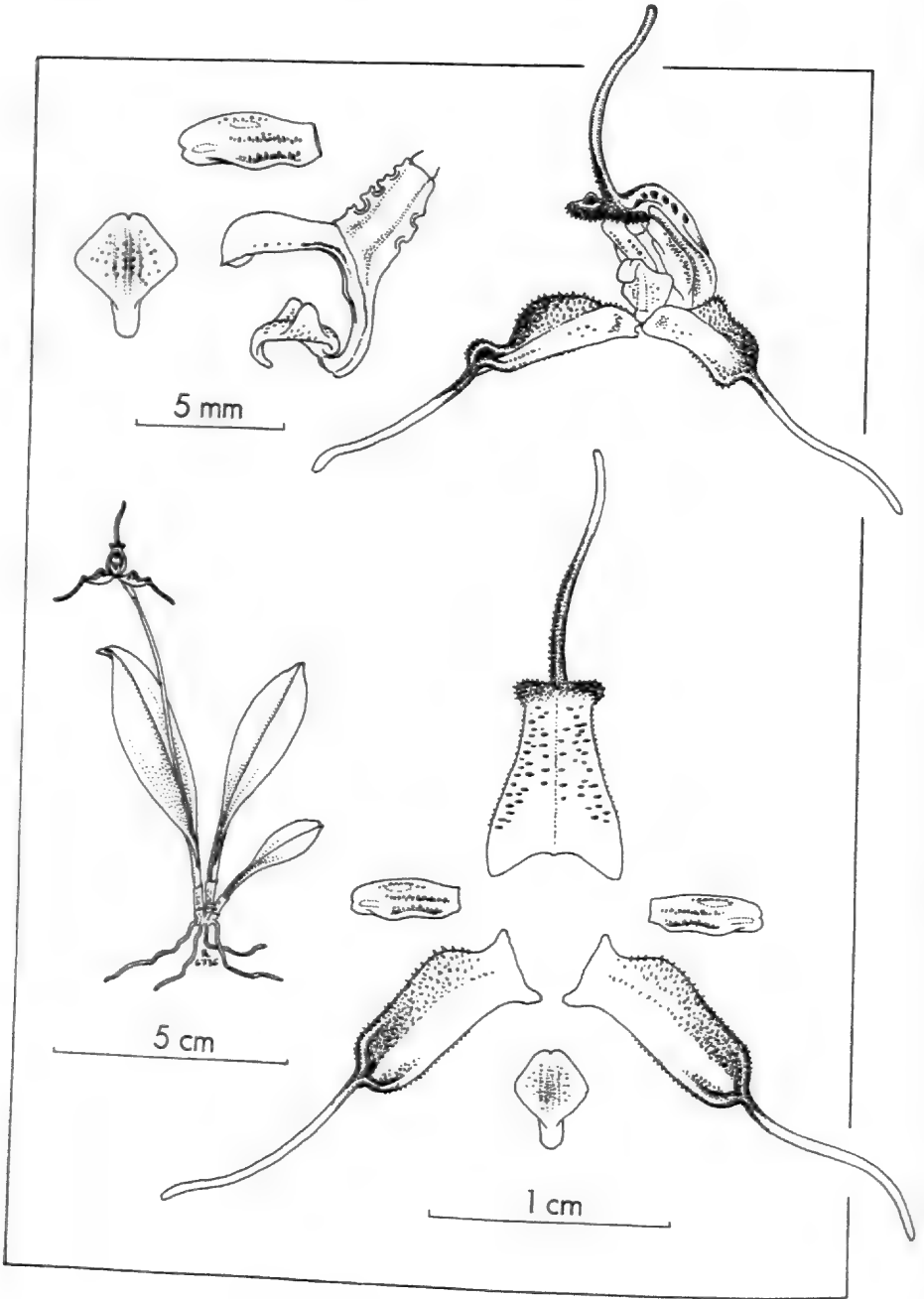


Plate 622. *Masdevallia anisomorpha*

Masdevallia fasciata Rchb.f., Gard. Chron. 15(1): 202, 1881.

Ety.: From the Latin *fasciatus*, "transversely striped," referring to the colored bands.

?Syn.: *Masdevallia bathyschista* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 76, 1920.

Ety.: From the Greek *bathyschistos*, "deeply divided," referring to the essentially free sepals.

Syn.: *Masdevallia trinemoidea* Kraenzl., Repert. Spec. Nov. Regni Veg. 17: 418, 1921.

Ety.: Named for Kränzlin's fancied illusion for a resemblance to *Masdevallia trinema* Rchb.f.

Syn.: *Masdevallia restrepioidea* Kraenzl., Notizbl. Bot. Gart. Berlin-Dahlem 8: 134, 1922.

Ety.: Named for Kränzlin's fancied illusion for a resemblance to a *Restrepia* H.B.K.

Syn.: *Masdevallia palmensis* Kraenzl., Bull. Misc. Inform. 100, 1925.

Ety.: Named for La Palma above Envigado near Medellín where the species was collected.

Syn.: *Rodrigoa fasciata* (Rchb.f.) Braas, Die Orchidee 30: 218, 1979.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1-1.5 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, 6-10.5 cm long including the petiole 1-2 cm long, the blade narrowly elliptical-obovate, subacute to obtuse, 1-2.3 cm wide, narrowly cuneate below into the slender, conduplicate, subpetiolate base. **Inflorescence** a successively few-flowered raceme up to 2 cm long, borne by an erect, slender peduncle 8-13 cm long, with a bract above the base, from low on the ramicaul; floral bracts inflated, 8-10 mm long; pedicel 5 mm long; ovary 3-4 mm long, lightly carinate; **dorsal sepal** light yellow, marked with dark purple-brown in transverse bars, glabrous, ovate, subcarinate, 18 mm long, 11 mm wide, free from the lateral sepals, forming a gaping, sepaline cup, the subacute apex contracted into a slender, purplish tail 3-3.5 cm long; **lateral sepals** deep purple, narrowly oblong with the sides revolute, microscopically pubescent, 20 mm long, 5 mm wide expanded, essentially free from each other, the subacute apices contracted into slender tails 3-3.5 cm long; **petals** light yellow-green, marked with purple-brown, elliptical, 8 mm long, 3.5 mm wide, the apex acute, obscurely angled, the labellar margin with a low, longitudinal callus ending a short distance above the unguiculate base; **lip** yellowish, diffusely mottled with dark red-purple, oblong-subpandurate, obtuse, 10 mm long, 5.5 mm wide, the disc shallowly channeled, the base subcordate, hinged on the end; **column** green, spotted with purple, semiterete, 6 mm long, the foot 5 mm long, with a short, incurved extension.

COLOMBIA: **Antioquia**: without locality, flowered in cultivation by Sander & Co., *G. Schmidtchen* s.n. (Holotype: W); "Medellín," *G. Schmidtchen* s.n. (W, type of *M. trinemoidea*); "Medellín," *Kalbreyer 359 et 1714* (type of *M. restrepioidea*, presumably destroyed at B); around La Palma above Envigado, alt. 2000-3000 m, Oct. 1884, *F.C. Lehmann 4286* (type of *M. palmensis*; K; isotypes: G, HBK); above Medellín, alt. 2000 m, 20 Nov. 1884, *F.C. Lehmann 4132* (G); El Retiro, Hda. Normandía, alt. 2500 m, 2 Dec. 1956, *M. Ospina-Hernández 68, 72, 78* (AMES); above Medellín, flowered in cultivation by M. & O. Robledo at La Ceja, 3 Oct. 1977, *C. Luer 1897* (SEL). "Cauca," without locality, *Madero* s.n. (type of *M. bathyschista* lost at B).



This species, superficially similar to *M. heteroptera*, is endemic in the mountains south and west of Medellín in the Central Cordillera and Western Cordillera of Colombia. It was described by Reichenbach from a collection by Schmidtchen from "Medellín." What appear to be dry flowers of this species are mixed with those of *M. heteroptera* that were sent to Reichenbach by Patin. A collection by Madero, most probably of this species and described by Schlechter as *M. bathyschista*, was lost in the destruction of the herbarium at Dahlem.

Masdevallia fasciata is distinguished by the loose, successively flowered raceme of relatively large flowers with nearly free sepals. The dorsal sepal is delicately marked with fine, purple, transverse bands and the slender tail is considerably longer than the blade. The purple, microscopically pubescent, lateral sepals are narrowly oblong with revolute sides and with similarly long tails. The lip is subpandurate, erect and exposed in the natural position.

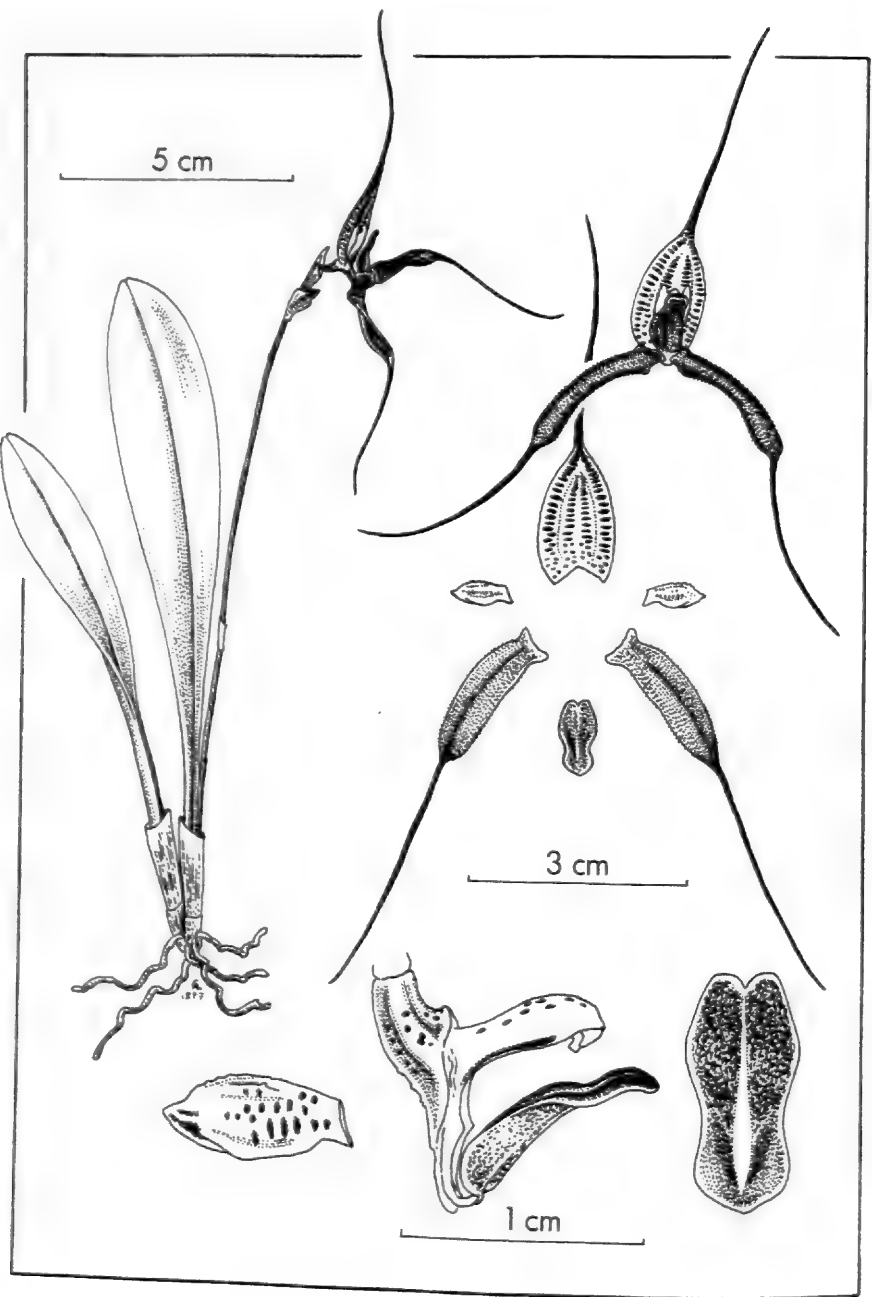


Plate 623. *Masdevallia fasciata*

Masdevallia heteroptera Rchb.f., Gard. Chron. 3(1): 590, 1875.

Ety.: From the Greek *heteropteron*, "having wings of different shapes," referring to the difference of the dorsal sepal compared to the lateral sepals.

Syn.: *Masdevallia fissa* Kraenzl., Repert. Spec. Nov. Regni Veg. 17: 429, 1921.

Ety.: From the Latin *fissus*, "cleft," referring to the non-connate lateral sepals.

Syn.: *Rodrigoa heteroptera* (Rchb.f.) Braas, Die Orchidee 30: 218, 1979.

Plant small to medium in size, epiphytic, densely caespitose; roots slender. Ramicauls erect, slender, 1-3 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, 4-9 cm long including the petiole 1-2.5 cm long, the blade narrowly elliptical, subacute to obtuse, 1-2 cm wide, narrowly cuneate below into the slender petiole. **Inflorescence** a loose, successively few-flowered raceme up to 4 cm long, borne by an erect, slender peduncle 6-8 cm long, with a bract above the base, from low on the ramicaul; floral bracts tubular, 6-9 mm long; pedicel 5-10 mm long; ovary 2-3 mm long, thickly ribbed; **sepals** minutely ciliate, the dorsal sepal light yellow, spotted with purple-brown, ovate, subcarinate, 20 mm long, 12 mm wide, free from the lateral sepals, forming a gaping, sepaline cup, the apex narrowly subacute to obtuse, contracted into a dark purple tail 10-12 mm long, the lateral sepals deep purple, oblong, with the sides revolute, densely pubescent, 15 mm long, 5 mm wide expanded, essentially free from each other, the subacute apices contracted into similar tails 10-12 mm long; **petals** light yellow, dotted with purple-brown, elliptical, 7 mm long, 4.5 mm wide, the apex obtuse, the labellar margin dilated, with a low, longitudinal callus ending a short distance above the unguiculate base; **lip** dark red, minutely pubescent, ovate, arcuate, obtuse, 10 mm long, 6 mm wide, the disc shallowly channeled, the base broadly subcordate, hinged on the end; **column** green, dotted with purple, semiterete, 9 mm long, the foot curved, 5 mm long, with a short, incurved extension.

COLOMBIA: **Antioquia**: without locality, flowered in cultivation in 1875 by the Rev. J.B. Norman s.n. (Lectotype here designated: W); "Medellín," *Patin* s.n. (W); "Medellín," *G. Schmidchen* s.n. (holotype of *M. fissa*: W); El Retiro, Hda. Normandía, alt. 2500 m, 2 Mar. 1956, *M. Ospina* H. 72, 78 (AMES, COL); Yarumal, Ratón Pelado, alt. 2650 m, 1 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia* 10043 (MO); El Carmen, Alto de San Lorenzo, alt. 2600 m, 17 Sept. 1984, *C.H. Dodson, R. Escobar & E. Valencia* 15328 (MO); Jardín, Quebrada La Cinfuentes, alt. 2530 m, collected by F. Lopez, flowered in cultivation at Colomborquídeas, 9 May 1985, *C. Luer* 11310 (MO). **Chocó**: at the pass between Urrao and Carmen de Atrato, alt. 2680 m, 31 May 1995, *C. Luer, J. Luer, L. Posada & R. Escobar* 17678 (MO).



This species is endemic in the mountains around Medellín in the central and western cordilleras of Colombia. It was described by Reichenbach from a plant of uncertain origin (possibly from Patin in Medellín) that was cultivated by the Rev. J.B. Norman, Whitchurch Rectory, Edgware, London. Reichenbach had previously received a few, similar, dry flowers from Patin, which he assumed were of the same species. Both specimens are now mounted on the same sheet at W, but Reichenbach had not designated either as the holotype. The flower from the Rev. Norman is designated as the lectotype because it is the flower from which the description was made, and it is able to be identified positively with a recent collection. The flowers from Patin are probably a mixture of *M. heteroptera* and what Reichenbach later described as *M. fasciata*.

Masdevallia heteroptera is distinguished by the loose, successively flowered raceme of relatively large flowers with nearly free sepals. The dorsal sepal is spotted with purple and the tail is a little shorter than the blade. The purple, pubescent, lateral sepals are oblong with revolute sides and with similarly short tails. The lip is ovate, erect and exposed in the natural position.

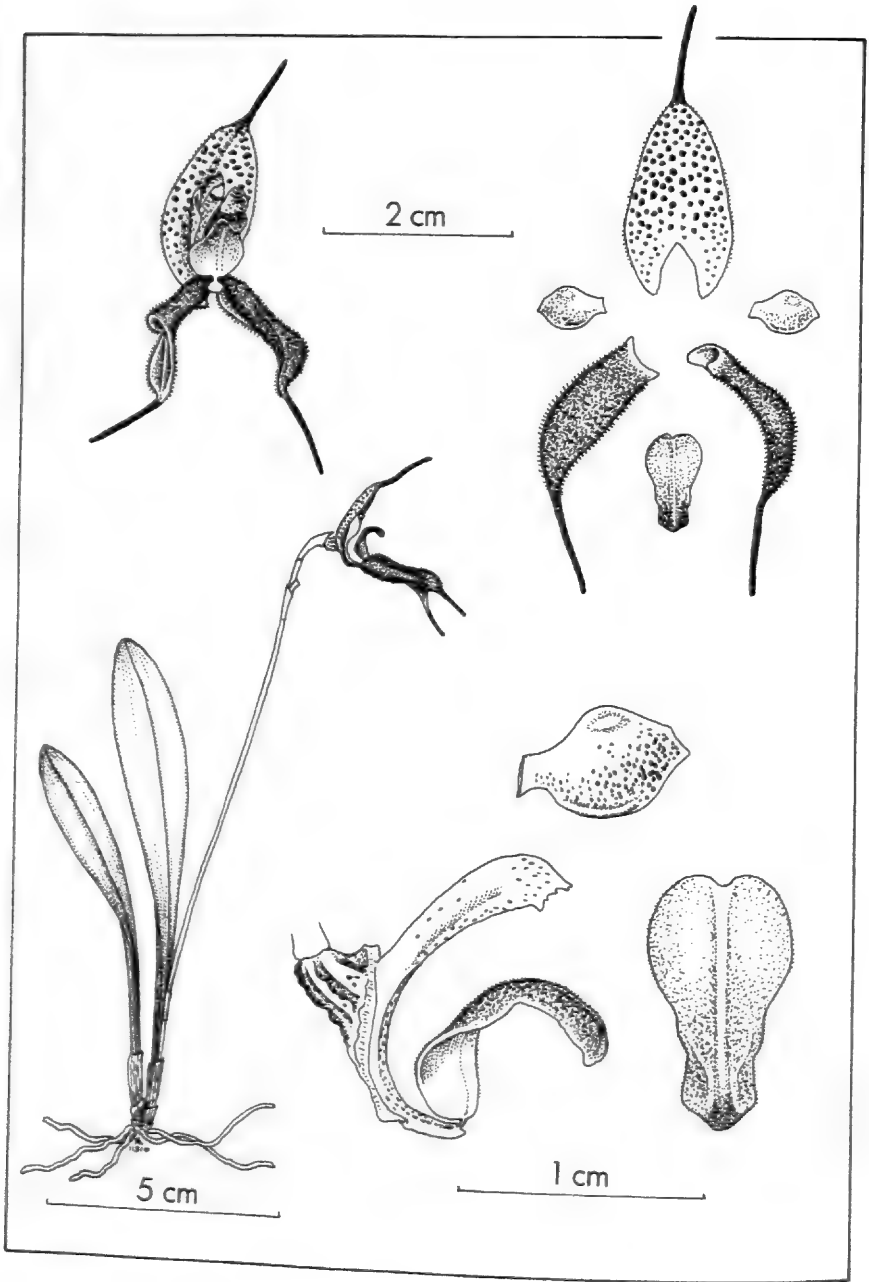


Plate 624. *Masdevallia heteroptera*

Masdevallia hortensis Luer & Escobar, *Orquideología* 16: 154, 1984.

Ety.: From the Latin *hortensis*, "pertaining to the garden," in reference to the locality near the town of Jardín, where the species was discovered.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1-1.5 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, thinly coriaceous, 6-8.5 cm long including the petiole 2-3 cm long, the blade narrowly obovate-elliptical, subacute, 0.9-1.3 cm wide, narrowly cuneate below into the petiole. **Inflorescence** a congested, successively flowered raceme borne by a slender, erect peduncle 6-9 cm long, with a bract below the middle, from low on the ramicaul; floral bract tubular, 8-10 mm long; pedicel 10 mm long; ovary winged, 3 mm long; **sepals** white, suffused with yellow to orange-brown below the middle, more or less spotted with purple, dorsal sepal oblong-cordate, 11 mm long, 6 mm wide, connate to the lateral sepals for 1 mm to form a gaping, sepaline cup, the apex rounded with a protruding callus below the base of the tail, abruptly contracted into an acutely reflexed purple tail up to 2.5 cm long, the lateral sepals oblong with revolute sides, oblique, curved, 12 mm long, 3.5 mm wide expanded, 1.5 mm wide unexpanded, connate 1 mm, forming a shallow mentum below the column-foot, the apices obtuse, contracted into reflexed, yellow tails up to 2.5 cm long; **petals** yellow, dotted with purple-black, elliptical-oblong, 4 mm long, 1.75 mm wide, the apex unevenly bi- or tridentate, the labelar margin with a curved, longitudinal carina, the upper half with a low, longitudinal callus; **lip** yellow, suffused with brown and with purple dots above the base, erect in the natural position, ovate, 4.5 mm long, 2.5 mm wide, narrowed below the recurved, expanded, obtuse apex with a low, midline callus, the base truncate, thickened, hinged beneath; **column** yellow, marked with purple, stout, semiterete, 4 mm long, the foot equally long with a thick, incurved extension.

COLOMBIA: **Antioquia**: Munic. of Jardín: La Cifuentes, alt. 2600 m, 26 May 1983, *R. Escobar, L. & J. Posada et al.* 2707 (Holotype: SEL; Isotypes: COL, JAUM), *C. Luer* illustr. 9142; flowered in cultivation at Colomborquideas, 6 Apr. 1988, *C. Luer* 13039 (MO).

This species was discovered by Rodrigo Escobar in a remote area of the Western Cordillera of Colombia that had not previously been known to have been visited by collectors. *Masdevallia hortensis* is closely allied to the rare *M. segurae*, but the most distinguishing feature is the protruding, knoblike callus at the apex of the dorsal sepal below the base of the tail. A similar callus is found at the base of the dorsal sepal in *M. hieroglyphica*, and in *Dracula levii* Luer and *D. dalstroemii* Luer. Similar to most other species of subgenus *Meleagris*, *M. hortensis* is from a relatively high altitude and is difficult to cultivate.



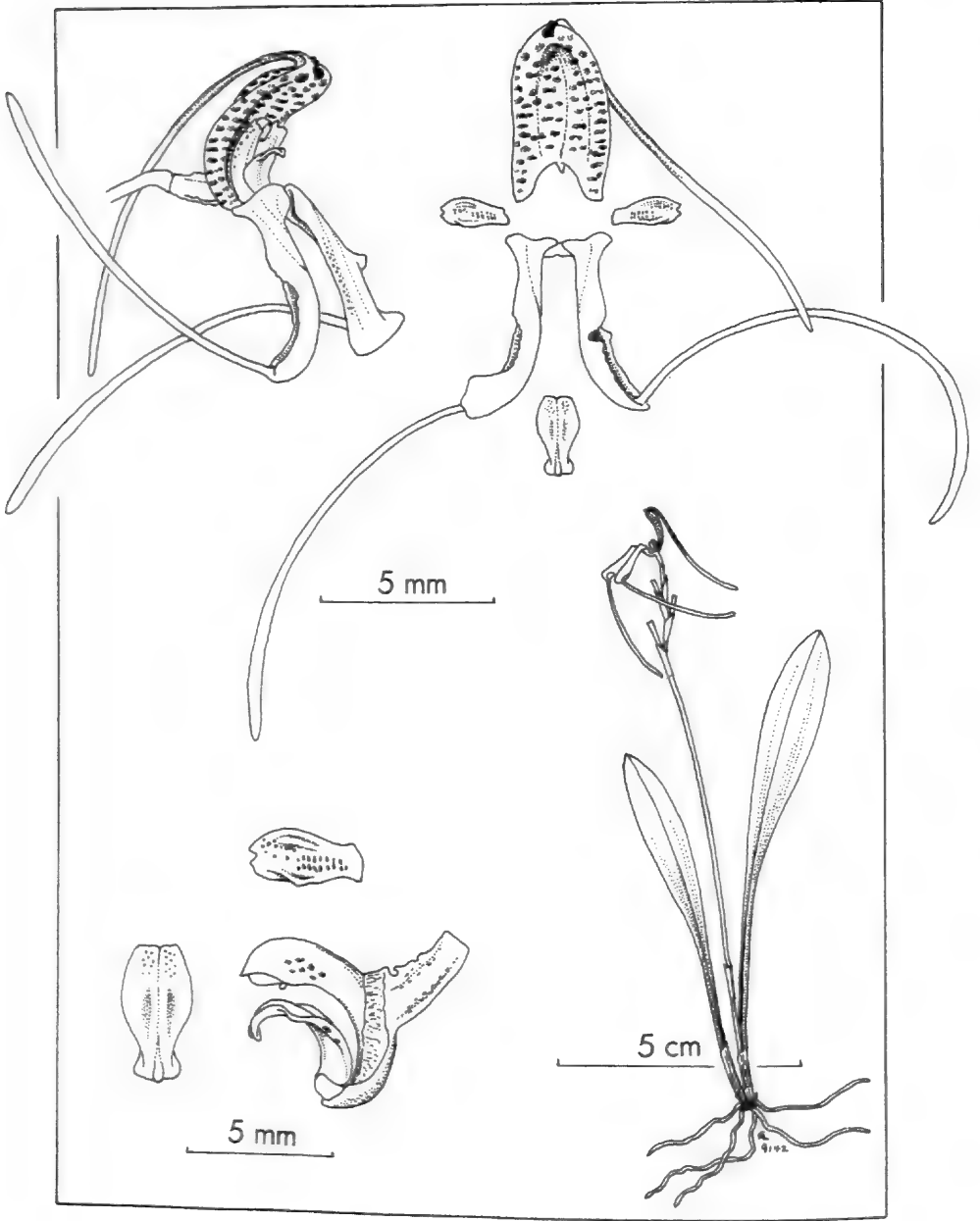


Plate 625. *Masdevallia hortensis*

Masdevallia meleagris Lindl., Ann. Mag. Nat. Hist. 15: 257, 1845, non Rchb.f. 1858.

Ety.: From the Latin, or the Greek *meleagris*, "a guinea-fowl, or a peacock," referring to the colorfully banded flowers.

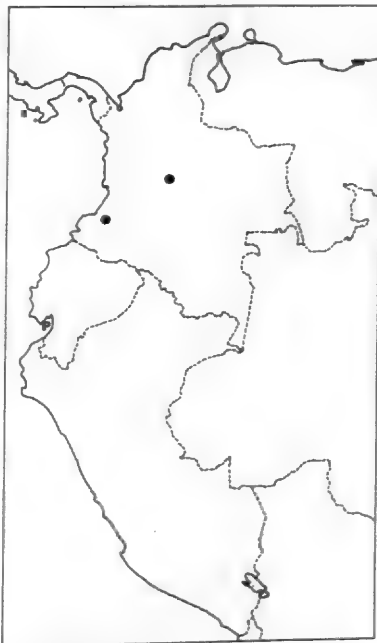
Syn.: *Rodrigoa meleagris* (Lindl.) Braas, Die Orchidee 30: 218, 1979.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1.5-2.5 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, 7-12.5 cm long including the petiole 2.5-5 cm long, the blade elliptical-obovate, subacute to obtuse, 1.6-2.3 cm wide, cuneate below into the slender petiole. **Inflorescence** a congested, successively few-flowered raceme, up to 1 cm long, borne by a slender, erect peduncle 10-12 cm long, with a tubular bract below the middle, from near the base of the ramicaul; floral bracts imbricating, 4-6 mm long; pedicel 7-9 mm long; ovary 3 mm long; **sepals** white, marked with purple, glabrous, the dorsal sepal prominently marked with transverse bars, obovate, lightly concave with widely undulating margins, 13 mm long, 10 mm wide, free from the lateral sepals, the apex obtuse to truncate, contracted into a slender, more or less reflexed tail, 25-32 mm long, the lateral sepals suffused with purple, ovate, oblique, subacute, 12 mm long, 8 mm wide, connate basally for about 1 mm to form a shallow, rounded mentum with the column-foot, the apices contracted into slender, yellow tails, becoming orange toward the apex; **petals** light yellow, spotted and suffused with red-purple, more or less oblong, 4 mm long, 1.5 mm wide, the apex thick, acute, decurved, the labellar margin with a thick, low, lightly undulate, longitudinal callus; **lip** orange, yellow toward the apex, obovate-pyriform, 5 mm long, 3 mm wide, the apex broadly rounded, the disc shallowly sulcate, the base thick, subcordate, hinged beneath; **column** light yellow, semiterete, 4 mm long, the foot equally long with a thick, incurved extension.

COLOMBIA: **Cundinamarca**: between the Páramo de San Fortunato and Fusagasugá, Bogotá, *T. Hartweg s.n.* (Holotype: K). **Cauca**: eastern slopes of Cerro Munchique west of Popayán, collected by G. Escobar et al., Oct. 1975, flowered in cultivation by M. & O. Robledo at La Ceja, 13 Oct. 1977, *C. Luer 2012* (SEL); same collection, flowered in cultivation at Colomborquídeas, 18 Mar. 1989, *C. Luer 14240* (MO).

Although reportedly collected in the Eastern Cordillera of Colombia by Hartweg during the first half of the nineteenth century, the only known locality today is in the Western Cordillera. There can be little doubt about the identity of this pretty species that was rediscovered by Gilberto Escobar and companions. The truncate dorsal sepal, free from the laterals, is prominently marked with transverse, purple bars while the lateral sepals are suffused with purple. All plants presently in cultivation are divisions of those few that were rediscovered.

Masdevallia meleagris is the first species known in a small group characterized by a short, successively flowered raceme borne by a peduncle round in cross-section, a free dorsal sepal, lateral sepals free nearly to the column-foot, and the lip hinged over the edge of the foot to the undersurface. As is the case with other species in subgenus *Meleagris*, this species does not thrive in cultivation.



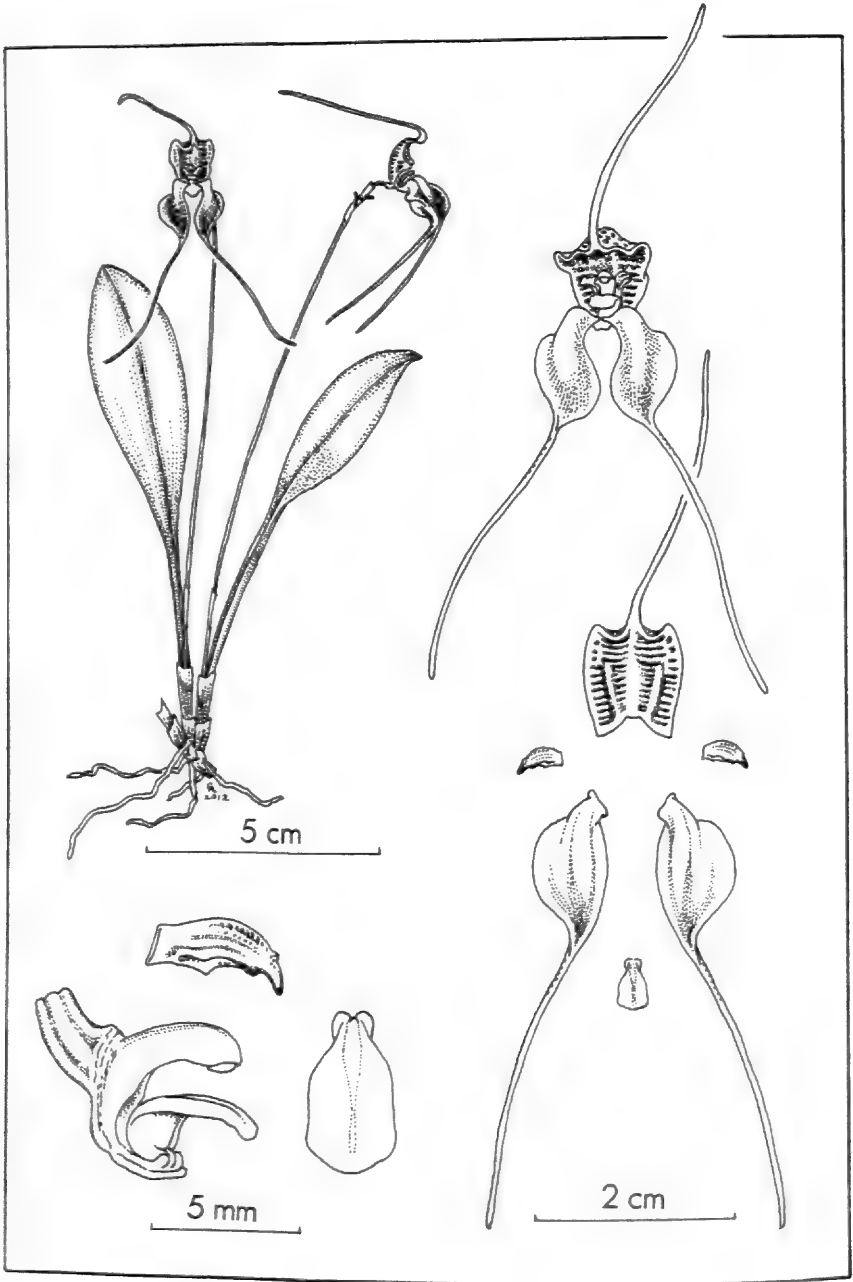


Plate 626. *Masdevallia meleagris*

Masdevallia milagroii Luer & Hirtz, sp. nov.

Ety.: Named for Plan de Milago in southeastern Ecuador where this species was collected.

Species haec *M. parvulae* Schltr., similis, sed floribus majoribus, sepalorum caudis incrassatis clavellatis, labello late oblongo supra medium convexo differt.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, coriaceous, narrowly elliptical-obovate, subacute to obtuse, 6 cm long including the indistinct petiole 2-2.5 cm long, 0.9 cm wide, the base gradually narrowed into the petiole. **Inflorescence** a congested, successively few-flowered raceme, borne by a slender, erect peduncle, with a bract below the middle, from low on the ramicaul; floral bract 5 mm long; pedicel 6 mm long; ovary 2-2.5 mm long; **sepals** glabrous, the dorsal sepal green, spotted with purple-brown, oblong, obtuse, concave, carinate, 9 mm long, 5.5 mm wide expanded, connate basally to the lateral sepals for less than 1 mm to form a gaping, shallow, sepaline cup, the apex contracted into a yellow, terete, thickened, clavate tail 11 mm long, the lateral sepals purple-brown with a few darker spots, cellular-pubescent, oblong-obovate, with more or less revolute sides, 11 mm long, 3.5 mm wide, connate to each other only at the base, the apex obtuse, contracted into yellow tails 9 mm long, thickened, but not as thick as the tail of the dorsal sepal; **petals** purple, oblong, irregularly obtuse, 4.5 mm long, 1.8 mm wide, with a low, longitudinal callus along the labellar margin; **lip** purple, broadly oblong, subquadrate, 4.5 mm long, 2.5 mm wide, concave below the middle with erect margins, convex above the middle, with a low, midline callus at the rounded, convex apex, the base broadly subtruncate, hinged from beneath to below the bulbous extension of the column-foot; **column** white, semiterete, 4.5 mm long, the foot thick, 3 mm long, with the curved extension thickened.

ECUADOR: **Morona-Santiago**: Plan de Milago, alt. 2000 m, during 2000, date unknown, A. Hirtz 7842 (Holotype: MO), C. Luer illustr. 20072.

This species, apparently endemic in southeastern Ecuador, is most similar to widely distributed *M. parvula*, but it differs from the latter in having larger flowers, and a clavate tail of the dorsal sepal. The petals are similar. Instead of ovate-subpandurate, the lip is broadly ovate with erect margins below the middle, and convex above the middle. The flower of *M. milagroii* is similar in size to that of *M. planadensis*, but the latter is distinguished by slender tails and a rounded, marginal callus at the base of the petal. A similar callus is seen on the petals of *M. ximena*, which is further distinguished by longer tails.



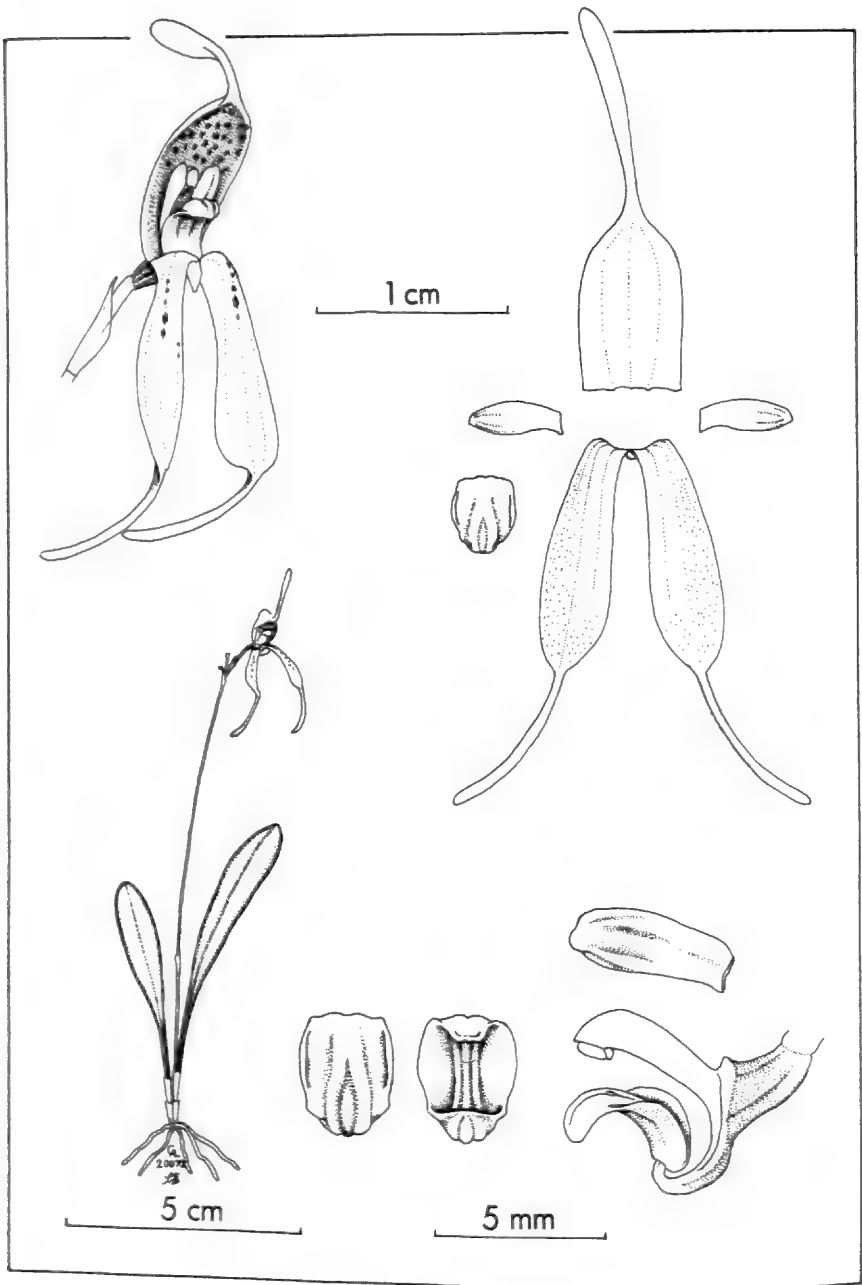


Plate 627. *Masdevallia milagroii*

Masdevallia pantomima Luer & Hirtz, *Selbyana* 22: 114, 2001.

Ety.: From the Greek *M. pantomimos*, "a silent mimic," in allusion to the posturing flower.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1-1.5 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, thinly coriaceous, 7-10 cm long including the petiole 1.5-2.5 cm long, the blade elliptical, subacute, 1-1.5 cm wide, cuneate below into the narrowly conduplicate petiole. **Inflorescence** a congested, successively several-flowered raceme up to ca. 2 cm long, borne by a slender, suberect peduncle to 13 cm long, with a bract below the middle, from low on the ramicaul; floral bracts thin, imbricating, 7-8 mm long; pedicel 6-7 mm long; ovary 5 mm long, with crested carinae; dorsal sepal translucent, with large, transverse, purple spots, with minutely ciliate margins, the blade ovate, shallowly concave, 18 mm long, 10 mm wide, the apex acute, contracted into a slender, purple tail 16 mm long, the base free from the lateral sepals; lateral sepals dark purple, minutely pubescent, the margins minutely ciliate, oblong, the blades 16 mm long, 4 mm wide, connate basally below the column-foot, the apex acute, contracted into a slender, purple tail 6 mm long; **petals** cartilaginous, white, spotted with purple, elliptical-oblong, 6.5 mm long, 3 mm wide, the apex truncate, obscurely lobulate, the labellar margin with a longitudinal carina, obtusely angled near the middle; **lip** dark purple, ovate, 6 mm long, 4 mm wide, narrowed in the apical third, the apex obtuse, with a low, midline callus, the basal two-thirds broadly dilated, the base subcordate, hinged on the end; **column** yellow, spotted with purple, semiterete, 6 mm long, the foot stout, bicallous, 5 mm long, with a thick, incurved extension.

ECUADOR: **Azuay**: without locality, purchased from a local collector and cultivated in Cuenca, 6 Mar. 2001, by E. Sánchez s.n. (Holotype: MO), C. Luer illustr. 19794.

This species, with flowers large for the subsection, superficially resembles the Colombian *M. heteroptera*, but, except for size, the details most closely resemble those of *M. parvula*. It is known only from one collection.

Masdevallia pantomima is characterized by large flowers with the dorsal sepal ovate and only shallowly concave, with large, transverse spots or bars. The tail is slender and equally long. The dark purple lateral sepals are narrowly oblong with much shorter tails. The petals are oblong with an obtusely angled callus at the middle. The lower two-thirds of the lip are dilated with the distal third narrowly oblong.



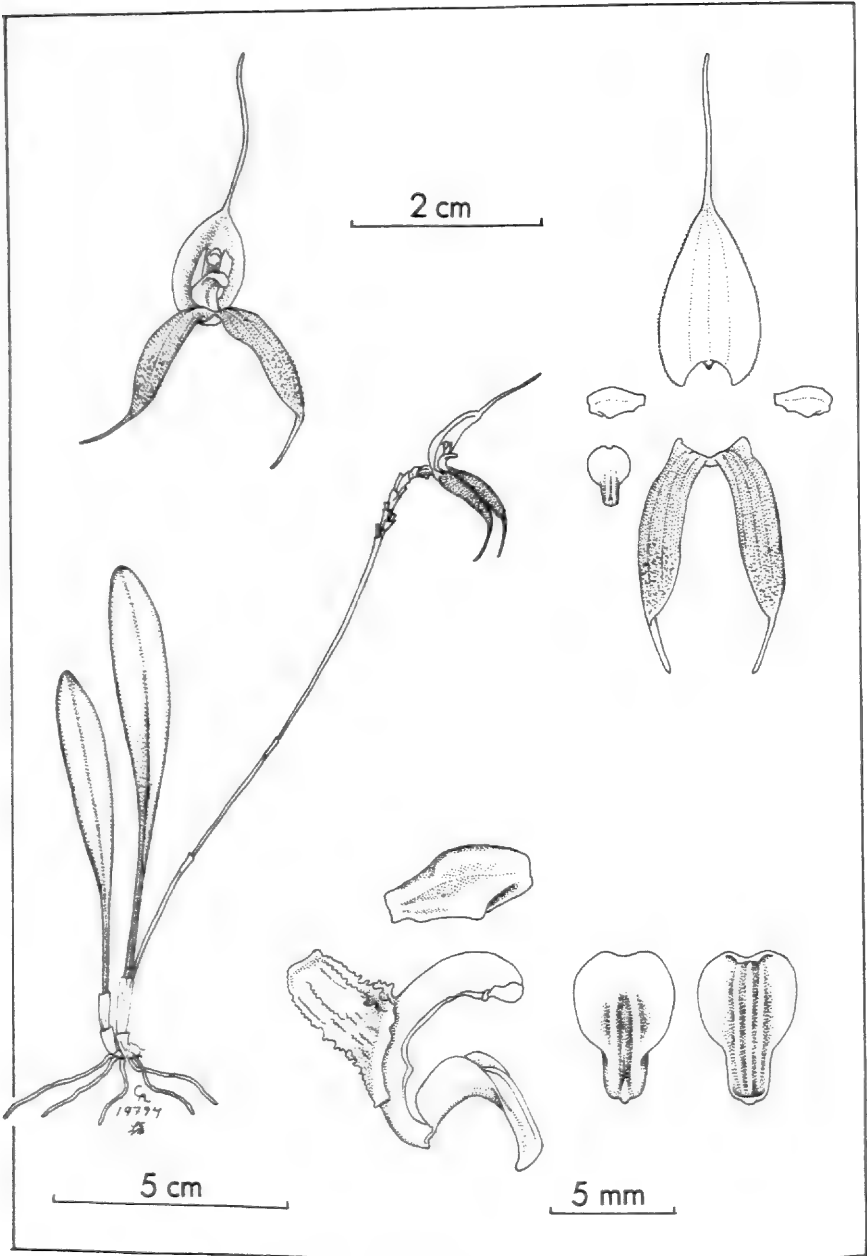


Plate 628. *Masdevallia pantomima*

Masdevallia parvula Schltr., *Repert. Spec. Nov. Regni Veg. Beih.* 8: 49, 1921.

Ety.: From the Latin *parvulus*, "very small," referring to the size of the flowers.

Syn.: *Masdevallia diversifolia* Kraenzl., *Bull. Misc. Inform.* 109, 1925.

Ety.: From the Latin *diversifolius*, "with leaves of various sizes," referring to the individual plants of the collection.

Syn.: *Rodrigoa diversifolia* (Kraenzl.) Braas, *Die Orchidee* 30: 220, 1979.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1-2 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, thinly coriaceous, 5-10 cm long including the petiole 1.5-3 cm long, the blade elliptical, subacute, 1-2.5 cm wide, cuneate below into the narrowly conduplicate petiole. **Inflorescence** a congested, successively few-flowered raceme up to ca. 1 cm long, borne by a slender, erect peduncle 6-9 cm long, with a bract below the middle, from low on the ramicaul; floral bracts thin, imbricating, 8-10 mm long; pedicel 4-6 mm long; ovary 2-2.5 mm long, with undulate carinae, more or less slightly papillose; dorsal sepal yellow, heavily spotted with purple or purple-brown, with minutely ciliate margins, the carinate midrib slightly serrate, the blade ovate, concave, 8 mm long, 8-7 mm wide, the apex subacute, contracted into a stout, yellow to orange tail 5-7 mm long, the base free from the lateral sepals, the lateral sepals maroon, shortly pubescent, the margins minutely ciliate, the blade oblong, 8 mm long, 3 mm wide, connate basally below the column-foot, the acute apex contracted into a yellow tail 7-8 mm long; **petals** cartilaginous, yellow, spotted with purple, elliptical-oblong, 4-4.5 mm long, 1.75-2 mm wide, the apex unequally and irregularly lobulate, the labellar margin with a longitudinal carina, slightly dilated near the middle; **lip** yellow, diffusely and intensely dotted with purple, ovate-subpandurate, 4-4.5 mm long, 2.5 mm wide, the apex rounded, recurved, with a low, midline callus, the base truncate, hinged on the end; **column** yellow, spotted with purple, semiterete, 4 mm long, the foot stout, equally as long, with a thick, incurved extension.

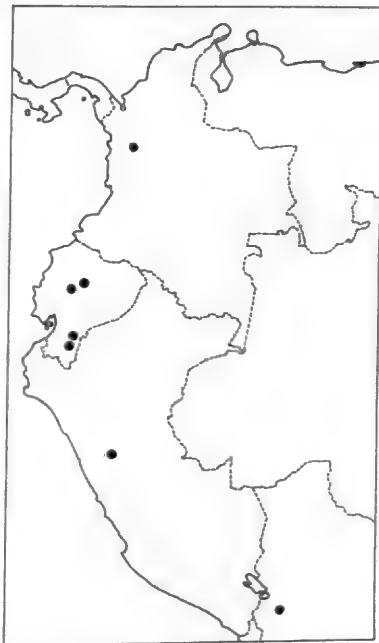
ECUADOR: **Chimborazo**: "In silvis occidentalibus montis Chimborazo," alt. 2500 m, Sept. 1891, A. Sodiro s.n. (Holotype destroyed at B, not present at QPLS). **Tungurahua**: La Merced near Baños, alt. 2600 m, 2 June 1999, L. Jost 1678 (Neotype here designated: MO). **Loja**: Nudo de Sabanilla, alt. 2400 m, 30 Jan. 1980, D. D'Alessandro 80-009 (SEL); cloud forest south of Yangana, alt. 2750 m, 1 Nov. 1982, C. Luer & R. Escobar 8263 (SEL); Nudo de Cajanuma, alt. 2900 m, 21 Oct. 1989, A. Bogh 68571 (AAU, MO, QCA). **Zamora-Chinchipe**: forests near Matala in Andes east of Loja, alt. 2800-3200 m, Dec. 1891, F.C. Lehmann 7008 (holotype of *M. diversifolia*: K); same area, 18 Nov. 1961, C.H. Dodson & L.B. Thien 1329 (MO, SEL); same area, 11 Feb. 1978, C. Luer, J. Luer & M. Portilla 2528 (SEL); cloud forest south of the pass south of Cachaco, alt. 2730 m, 12 May 1981, C. Luer, J. Luer & D. D'Alessandro 6202 (SEL); same area, 23 Mar. 1985, C. Luer, J. Luer, A. Hirtz & W. Flores 10955 (MO). COLOMBIA: **Antioquia**: El Retiro, Normandia, above Colomborquídeas, alt. 2500 m, 26 Apr. 1997, R. Escobar 8344 (JAUM, MO); El Retiro, between Colomborquídeas and Fitzebad, Mar. 1989, J. Schoonen s.n. (MO).

PERU: **Junín**: Tarma, collected by J. Meza near Huasa-Huasi, alt. 3000 m, flowered in cultivation in Munich, 15 May 1980, by W. Königler s.n. (SEL, Herb. H. Königler).

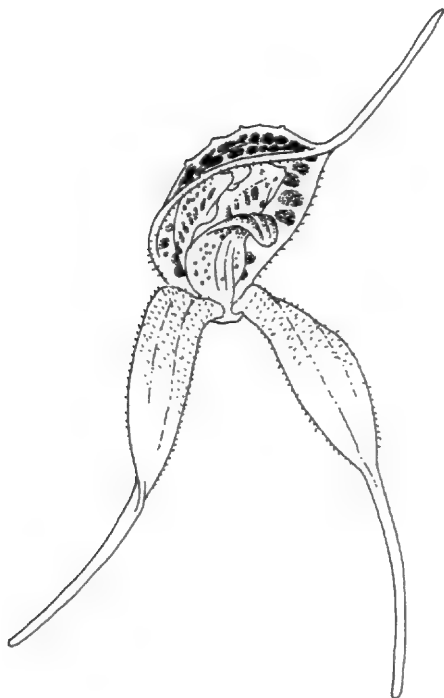
BOLIVIA: **La Paz**: Nor Yungas, epiphytic in wet forest between Chuspipata and Yolosa, alt. ca. 1800 m, collected 24 Nov. 1992, flowered in cultivation in San Francisco, Nov. 1993, W. Teague 183 (MO), C. Luer illustr. 17056.

This species is the most widely distributed member of the subgenus *Meleagris*. Lehmann's unfinished watercolor painting (t. 130 of his 7008) of this species at Kew bears the intended name of *Masdevallia bicruris*. It grows on mossy branches of stunted trees in cool, wet cloud forests from Colombia through Ecuador and Peru, into Bolivia, usually at altitudes near 3000 meters above sea level, often associated with numerous other pleurothallids.

Masdevallia parvula is distinguished by the small habit and small flowers borne



in a congested raceme. The sepals are free, the dorsal sepal is concave and spotted with purple; the lateral sepals are usually dark purple and minutely pubescent. The stout, orange tails are slightly shorter than the blades. The petals are obtuse and carinate along the lower margin. The lip stands erect in the center of the flower.



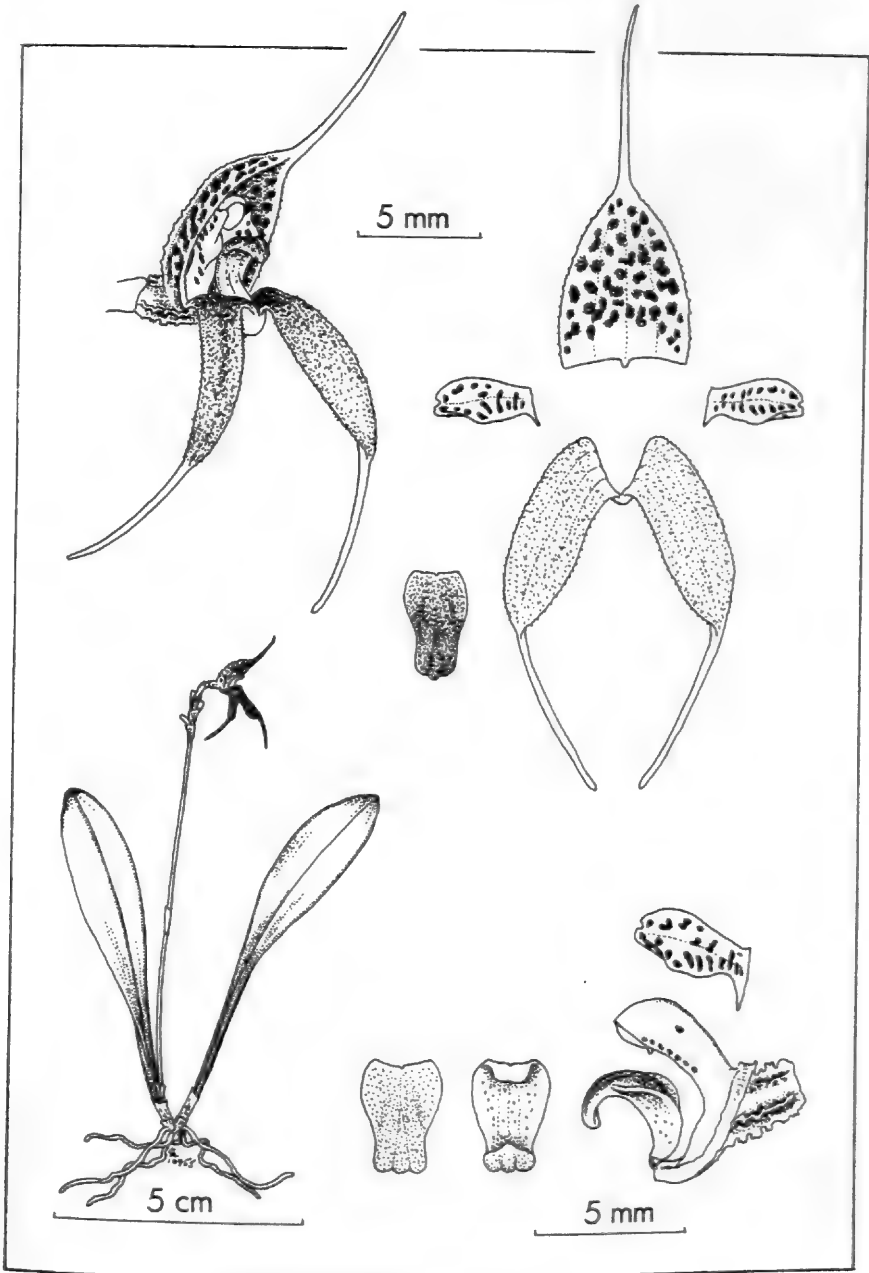


Plate 629. *Masdevallia parvula*

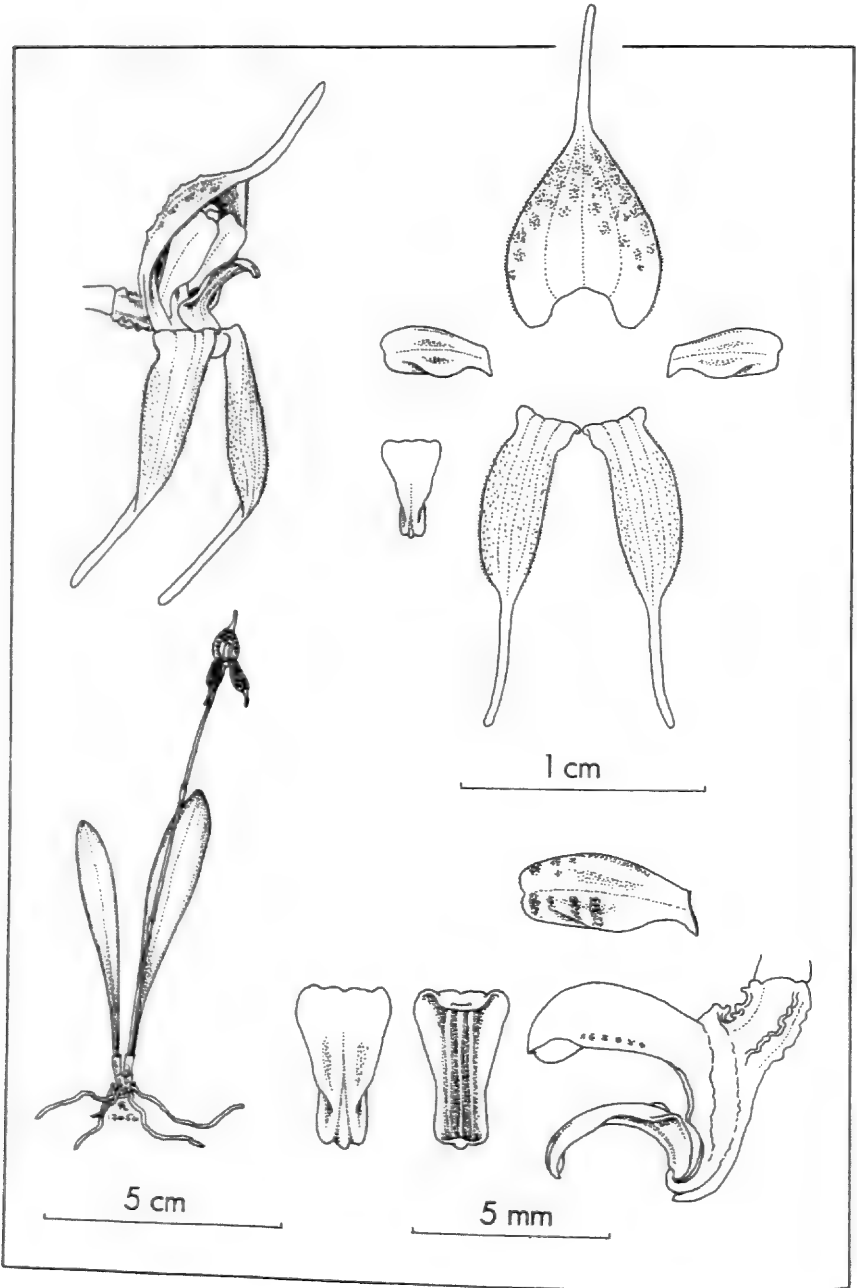


Plate 630. *Masdevallia parvula*

Masdevallia planadensis Luer & Escobar, *Lindleyana* 3: 50, 1988.

Ety.: Named for the La Planada Research Center where this species was discovered and cultivated.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 8-12 mm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, coriaceous, narrowly elliptical, acute, 4-7 cm long including the indistinct petiole 1.5-2.5 cm long, 0.8-1 cm wide, the base gradually narrowed into the petiole. **Inflorescence** a congested, successively few-flowered raceme, borne by a slender, erect peduncle, with a bract below the middle, from low on the ramicaul; floral bract 6 mm long; pedicel 5-6 mm long; ovary 2.5-3 mm long; **sepals** dull white, lightly suffused with pale purple externally, glabrous, the dorsal sepal oblong, obtuse, concave, carinate, 11 mm long, 7 mm wide expanded, connate basally to the lateral sepals for 1 mm to form a gaping, shallow, sepaline cup, the apex contracted into a terete, whitish tail 7 mm long, the lateral sepals oblong with more or less revolute sides, obtuse, 13.5 mm long, 5 mm wide expanded, connate to each other only at the base; **petals** white, cartilaginous, oblong, obtuse, abruptly and obliquely acute, 5 mm long, 1.5 mm wide, with a longitudinal callus along the labellar margin ending in an obtuse, conical callus above the base; **lip** white, oblong, 5 mm long, 3 mm wide, slightly constricted below the apex, the apex subtruncate, revolute, with a low, midline callus, the disc shallowly channeled, the base shallowly concave, hinged from beneath to below the bulbous extension of the column-foot; **column** white, semiterete, 4 mm long, the foot thick, 4 mm long, with the curved extension thickened.

COLOMBIA: **Nariño**: Munic. of Ricaurte: collected near La Planada, alt ca. 1800 m, flowered in cultivation at the Orquideario by J. Orejuela, 25 Jan. 1987, C. Luer 12488 (Holotype: MO).
 ECUADOR: **Carchi**: south of Chical, Cerro Oscuro, alt. 2100 m, May 1997, A. Hirtz 6554 (MO). **Bolivar**: wet forest west of Salinas and La Palma, alt. 1250 m, 12 Mar. 1991, C. Luer, J. Luer, A. Hirtz et al. 15017 (MO).

This species, first found on the western declivity of southern Colombia, is now known to occur also on the western declivity of Ecuador. *Masdevallia planadensis* is distinguished from the other species of the subgenus by the dull white, glabrous flowers faintly suffused with purple externally; relatively short sepaline tails; oblong, abruptly and obliquely acute petals; and an oblong lip with a revolute, subtruncate apex.



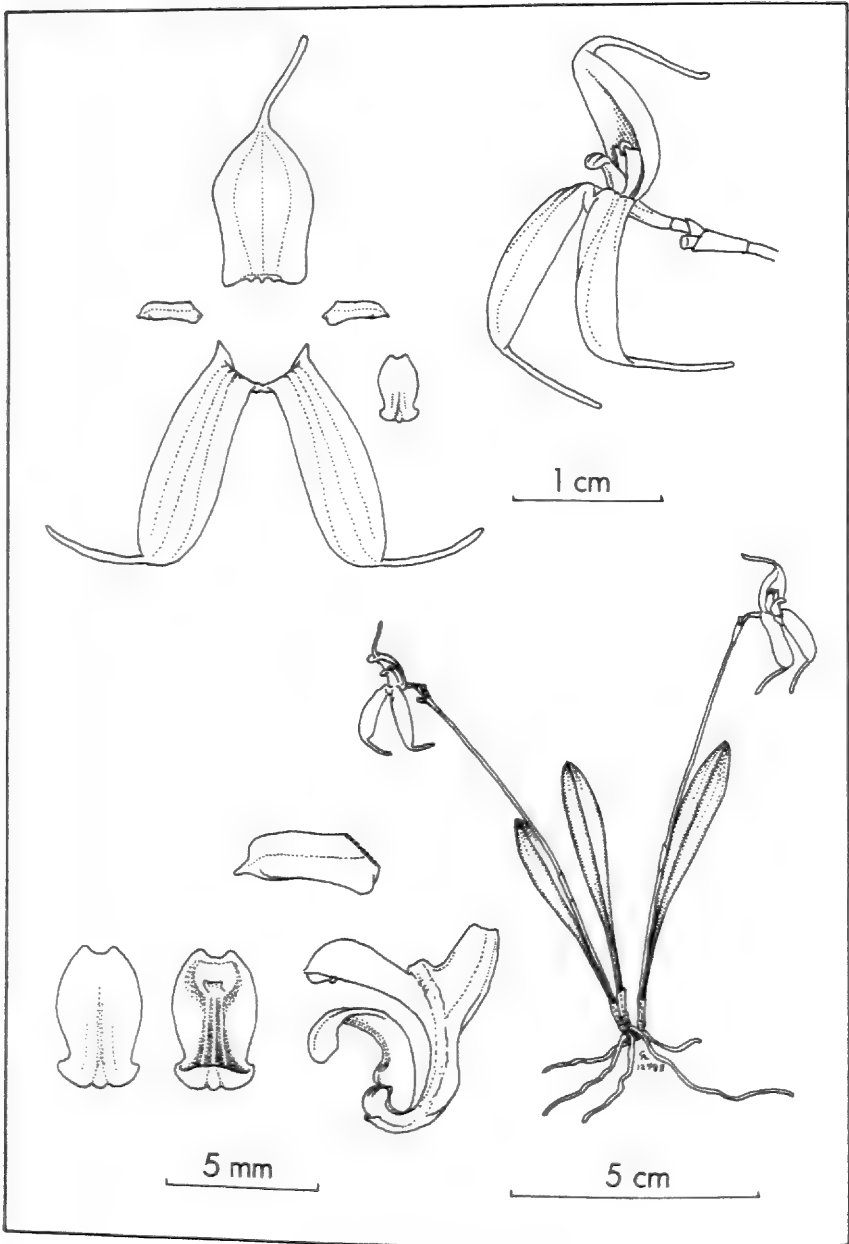


Plate 631. *Masdevallia planadensis*

Masdevallia segurae Luer & Escobar, *Orquideología* 13: 100, 1978.

Ety.: Named in honor of the late Sr. Evelio Segura who collected this species among many others.

Syn.: *Rodrigoa segurae* (Luer & Escobar) Braas, *Die Orchidee* 30: 219, 1979.

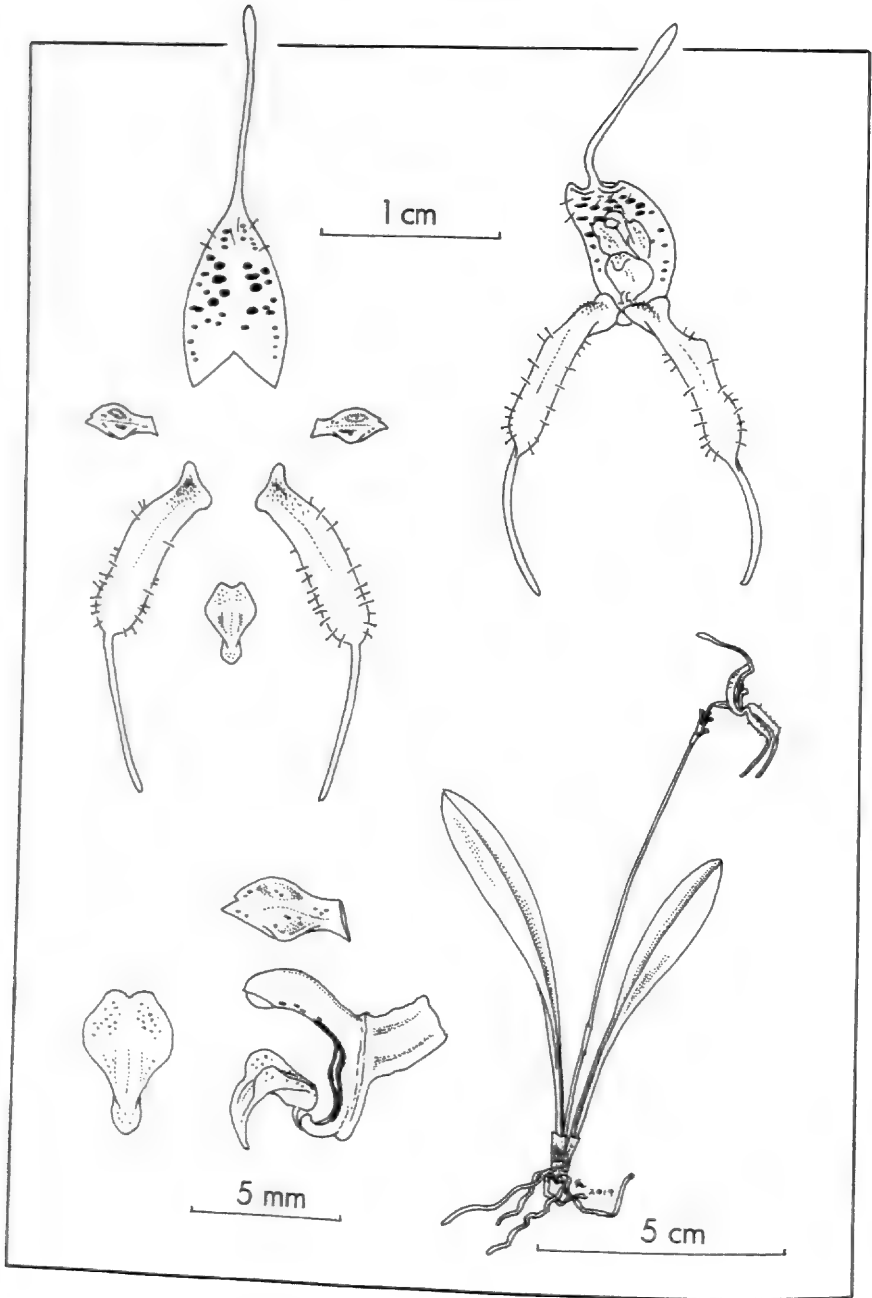
Plant small, epiphytic, caespitose; roots slender. **Ramicauls** erect, slender, 5-10 mm long, enclosed by 2-3 short, tubular sheaths. **Leaf** erect, thinly coriaceous, 4-8 cm long including the petiole 1-3 cm long, the blade narrowly elliptical-obovate, subacute, 1-1.3 cm wide, the base gradually narrowed into the petiole. **Inflorescence** a congested, successively few-flowered raceme borne by an erect, slender peduncle 7-9 cm long, with a bract near the base, from low on the ramicaul; floral bracts thin, tubular, imbricating, 5 mm long; pedicel 5-6 mm long; ovary 2-3 mm long, lightly winged; **sepals** white, dotted with purple, sparsely long-pubescent within, the hairs minutely capitate, the dorsal sepal ovate, subcarinate, 10 mm long, 6 mm wide, free from the lateral sepals, the apex acute, contracted into a slender, erect, orange, clavate tail 12 mm long, the lateral sepals bright orange at the base, narrowly oblong with revolute side-margins, 10 mm long, 3 mm wide, barely connate at the base to form a shallow mentum beneath the column-foot, the rounded apices contracted into slender, yellow-green tails 10 mm long; **petals** white, dotted with purple, obovate-subpandurate, 4 mm long, 2 mm wide, both halves callously thickened, the apex acute to shallowly notched; **lip** white, dotted with purple, obpyriform-ovate, arcuate, 4.5 mm long, 3 mm wide, narrowed above the middle, the apex obtuse, the disc shallowly channeled, the base subcordate, connected by a thin strap to the column-foot; **column** white, dotted with purple, semiterete, 4 mm long, the foot thick, 4 mm long with a thick incurved extension.

COLOMBIA: Antioquia: Munic. of Urrao, headwaters of Río Pabón, Las Cruces, alt. 2000-2200 m, collected by E. Segura, 20 June 1975, flowered in cultivation by M. & O. Robledo at La Ceja, R. Escobar 1601 (Holotype: JAUM); same collection, flowered in cultivation 14 Oct. 1977, *C. Luer* 2019 (SEL); flowered in cultivation 18 Mar. 1989, *C. Luer* 14254 (MO).

This species is rare and endemic in one valley in the Eastern Cordillera of Colombia. Only a few plants were found on one occasion by the collector Evelio Segura in 1977. All plants currently in cultivation have originated from them.

Masdevallia segurae is recognized by the subcongested raceme of successive flowers borne by a slender peduncle. The white, sparsely purple-dotted flowers are widely spread with orange at the bases of the lateral sepals. Long, white, capitate hairs are scattered on the inside of the sepals. The apex of the tail of the dorsal sepal is clavate; the petals are acute and more or less notched at the apex; the lip is arcuate and broadly ovate.



Plate 632. *Masdevallia segurac*

Masdevallia ximena Luer & Hirtz, Novon 1: 171, 1991.

Ety.: Named in honor of Sra. Ximena de Hirtz, co-discoverer of this species.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1-1.5 cm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, thinly coriaceous, petiolate, 4-9 cm long including the 1.5-3 cm long petiole, the blade elliptical, acute, 1-2 cm wide, the base cuneate into the slender, channeled petiole. **Inflorescence** a congested, successively few-flowered raceme, borne by a slender, erect peduncle 5-9 cm long, with a bract near the middle, embraced below by the conduplicate base of the leaf, from low on the ramicaul; floral bracts thin, tubular, imbricating, 5-6 mm long; pedicel 7 mm long; ovary 1.5-2 mm long; **sepals** glabrous, the dorsal sepal yellow with brown, marginal bars, deflexed, the apices subacute, contracted into a slender (slightly thickened in the middle portion), reflexed, brown-spotted tail ca. 12 mm long, the lateral sepals red-brown with obscure brown, marginal bars, oblong, 9 mm long, 3 mm wide, essentially free but connate to the column-foot to form a round mentum, then deflexed, the apices subacute, contracted into slender, brown-spotted tails ca. 11 mm long; **petals** orange with a few red dots, oblong, 3.5 mm long, 1.25 mm wide, the apex shortly apiculate, the labellar margin with a longitudinal carina ending in a rounded callus at the base; **lip** red, flecked with darker red, oblong-subpandurate, arcuate, 3.5 mm long, 2 mm wide, the apex rounded, reflexed, the disc with a low, midline callus ending at the apex, the base subcordate, thinly hinged beneath the thickened base to the under margin of the apex of the column-foot; **column** yellow, semiterete, 3 mm long, with an equally long, curved column-foot.

ECUADOR: **Bolívar**: epiphytic in wet forest, alt. 1250 m, west of Salinas and La Palma, 10 Mar. 1991, C. Luer, J. Luer, A. Hirtz, X. Hirtz, J. del Hierro, M. Evans, M. & F. Navarro 14970 (Holotype: MO). **Imbabura**: wet forest along Río Los Cedros, Los Cedros Reserve, alt. 1400 m, 23 Jan. 1993, S. Dalström, T. Höijer & H. Wanntorp 1738 (MO).

This species, apparently endemic in southern Ecuador, resembles very much *M. parvula* and *M. alexandri*, but it seems most closely related to *M. planadensis* with which it grows in Ecuador.

From *M. parvula*, it is distinguished by the glabrous sepals marked with large, marginal bars instead of small, random spots. The petals are similar to those of *M. planadensis* with a rounded callus at the base. *Masdevallia parvula* occurs at altitudes over 2600 meters above sea level; *M. ximena* is found at an altitude less than half as high.

From *M. alexandri*, it is distinguished by the much shorter sepaline tails; sepals with broad, marginal bars instead of minute, random dots; and an ovate instead of an orbicular dorsal sepal. From *M. planadensis*, found for the first time in Ecuador and growing with *M. ximena*, it is distinguished by smaller flowers prominently marked with red and purple.



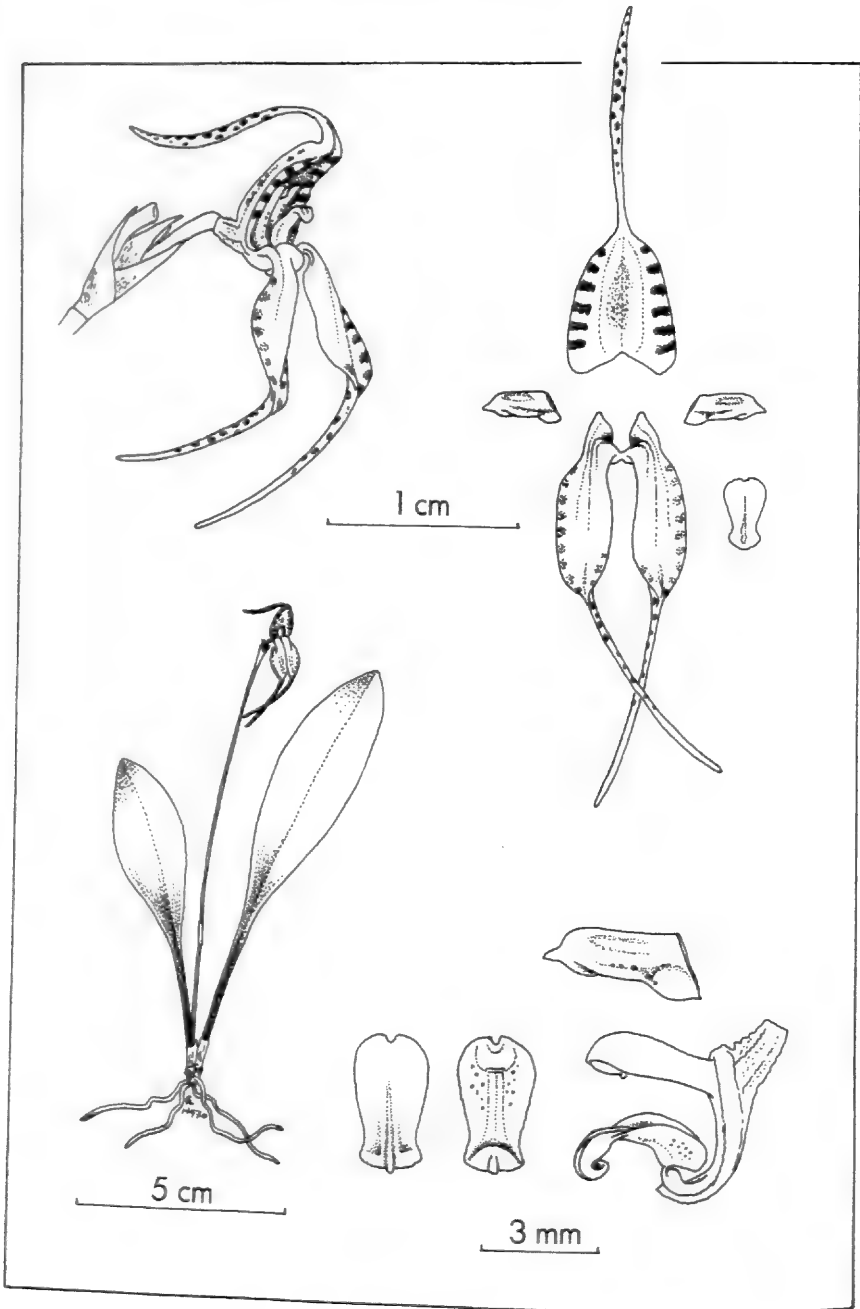


Plate 633. *Masdevallia ximenesae*

MASDEVALLIA SUBGENUS NIDIFICIA

Masdevallia subgenus **Nidificia** Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 77: 10, 2000.

Syn.: *Masdevallia* sect. *Nidificae* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 16: 12, 1986.

Type: *Masdevallia nidifica* Rchb.f.

Ety.: From the Latin, *nidificus*, "built like a nest," referring to the caespitose habit.

Syn.: *Masdevallia* sect. *Ophioglossae* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 16: 15, 1986.

Type: *Masdevallia ophioglossa* Rchb.f.

Plants small, caespitose; roots slender. Ramicauls erect, slender, abbreviated, enclosed by 2-3 imbricating sheaths, the inflorescence emerging laterally from near the base. **Leaf** erect, coriaceous, narrowly elliptical to narrowly obovate, subacute to obtuse, petiolate. **Inflorescence** a solitary flower, borne by an erect, slender peduncle, round in cross section, with a bract near or at the base; floral bract tubular, enclosing the pedicel; pedicel short; ovary carinate-crested; **sepals** membranous, variously colored, smooth to minutely pubescent within, acute to obtuse, variously connate into a tube that is inflated in the lower portion, with the apices contracted into tails; **petals** cartilaginous, variously callous along the labellar margin, producing 1 or 2 marginal processes; **lip** erect or suberect within the flower, oblong, with marginal folds that divide the lip into an epichile and a hypochile, the base truncate; **column** semiterete, the anther ventral, shortly hooded, the stigma ventral, the base of the column developed into a column-foot with the apex of the ovary which is elongate and curved beyond the ovary, forming with the bases of the lateral sepals a deep, rounded mentum.

Reichenbach described *Masdevallia molossus*, the first species attributable to this subgenus, in 1877, and included it in the unranked, infrageneric category *Saltatrices*, based on *M. saltatrix*. *Saltatrices* is presently treated as a subsection of section *Masdevallia*. The following year, when he described *M. nidifica*, the next species attributable to subgenus *Nidificia*, Reichenbach included it in the unranked, infrageneric category *Clausae porrectae*, which is based on *M. ionocharis*. This latter taxon is now considered synonymous with subsection *Masdevallia*. Section *Nidificae* was proposed in 1986 to accommodate species with single flowers, crested ovaries and a divided lip. In addition, the sepaline tube is inflated basally with an elongated column-foot. The section was raised to subgenus *Nidificia* in 2000.

This subgenus contains nine closely related species distributed in the mountains of Central America, Colombia, and Ecuador. It is characterized by a small, caespitose habit with narrow, obovate leaves; a single-flowered peduncle; more or less inflated floral bracts; carinate-crested ovaries; sepals connate into a tube with an inflated base created by a long, curved column-foot; and a lip, divided by marginal folds into a hypochile and an epichile, which stands more or less erect within the flower.

BINOMIALS PUBLISHED IN MASDEVALLIA ATTRIBUTABLE TO
SUBGENUS *NIDIFICIA*

<i>M. antioquiensis</i> Lehm. & Kraenzl. = M. molossus	
<i>M. anura</i> Kraenzl. = M. molossoides	
M. bucculenta Luer & Hirtz.....	Plate 634.
<i>M. cyathogastra</i> Schltr. = M. nidifica	
M. dynastes Luer.....	Plate 635.
<i>M. grossa</i> Luer = M. ophioglossa	
M. lamia Luer & Hirtz.....	Plates 636, 637.
M. molossoides Kraenzl.	Plate 638.
M. molossus Rchb.f.	Plate 639.
M. nidifica Rchb.f.	Plates 640, 641.
M. ophioglossa Rchb.f.	Plates 642, 643.
<i>M. ophioglossa</i> subsp. <i>grossa</i> (Luer) Luer = M. ophioglossa	
<i>M. rhopalura</i> Schltr. = M. molossoides	
<i>M. schmidtchenii</i> Kraenzl. = M. molossus	
M. strigosa Königler.....	Plate 644.
<i>M. tenuicaudata</i> Schltr. = M. nidifica	
M. ventricosa Schltr.	Plate 645.

KEY TO THE SPECIES

1 Sepals with tails slender.....	2
1' Dorsal sepal with the tail thick.....	4
2 Peduncles 6-8 cm long; sepals yellow, with tails 8-12 mm long; epichile of the lip narrowly triangular.....	<i>M. ventricosa</i>
2' Peduncles 3-5 cm long; sepals variously marked with purple, with tails 8-30 mm long; epichile of lip not narrowly triangular.....	3
3 Sepaline tube narrowed at the ostium; lip with the epichile transversely triangular.....	<i>M. bucculenta</i>
3' Sepaline tube not narrowed at the ostium; lip with epichile ovate.....	<i>M. nidifica</i>
4 Dorsal sepal with the tail clavate.....	5
4' Dorsal sepal with the tail not clavate.....	9
5 Leaves more than 5 cm long; lip widest at the base.....	<i>M. dynastes</i>
5' Leaves less than 4 cm long; lip not widest at the base.....	6
6 Sepals with rudimentary tails less than 2 mm long.....	<i>M. molossus</i>
6' Sepals with tails about as long as the blades.....	7
7 Lateral sepals with tails not clavate.....	<i>M. strigosa</i>
7' Lateral sepals with tails clavate.....	8
8 Sepals white or lightly spotted, with tails as long as the blades.....	<i>M. lamia</i>
8' Sepals suffused with purple, with tails shorter than the blades.....	<i>M. molossoides</i>
9 Sepals with free portions contracted into tails ca. 0.5 mm thick.....	<i>M. ophioglossa</i>
9' Sepals with tails ca. 2 mm thick, emerging at the orifice of the tube.....	

Masdevallia bucculenta Luer & Hirtz, *Lindleyana* 10: 115, 1995.

Ety.: From the Latin *bucculentus*, "with full cheeks," in allusion to the inflated sepaline tube.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect to suberect, slender, 5 mm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, coriaceous, petiolate, 2.5-4 cm long including the 1-2 cm long petiole, the blade elliptical, obtuse to subacute, 6-8 mm wide, cuneate below into the slender petiole. **Inflorescence** a solitary flower borne by a filiform, suberect peduncle 3-3.5 cm long, with a bract above the base, from low on the ramicaul; floral bract 4 mm long; pedicel 3 mm long; ovary 1 mm long, 2 mm wide, with 6 lightly irregular crests; **sepals** thin, translucent white, glabrous, with margins more or less minutely erose, carinate along the midvein externally, the dorsal sepal subpandurate, concave, 7 mm long, 6 mm wide expanded, connate 5 mm into an inflated, sepaline tube, constricted near the middle on the lower half, the apex transversely obtuse, abruptly contracted into a slender tail 8 mm long, the lateral sepals suffused with purple, subpandurate, oblique, 7 mm long, connate 3 across a sharp, transverse fold, 4 mm wide, the base below the fold dilated, forming with the column-foot the bulbous base of the sepaline tube, the acute apices contracted into slender tails 8 mm long; **petals** white, oblong-multi-angled, 2 mm long, 1 mm wide, the apex acute, the upper margin obtusely angled in the distal third, the labellar half with a suberect, subacute triangular carina from near the middle, and a deflexed, acute angle on the basal third; **lip** yellow, subpandurate, divided by marginal folds into an epichile and a hypochile, arcuate, erect, 2.5 mm long, 2 mm wide, the epichile transversely triangular or flabellate, minutely erose, with the apex acute, recurved, and with the lateral angles acute, expanded, the hypochile suborbicular, the base truncate, hinged on the end; **column** white, semiterete, 3 mm long, the curved foot 4 mm long with an incurved extension.

ECUADOR: **Pichincha**: between San Miguel de los Bancos and Mindo, alt. 1450 m, 1 Apr. 1984, C. Luer, S. Dalström, T. Höjjer & A. Hirtz 9862 (Holotype: MO); Mindo, alt. 1500 m, Feb. 1993, A. Hirtz 5882 (MO).

This species, known from the western slopes of Pichincha in northwestern Ecuador, is closely allied to sympatric *M. nidifica*, which is relatively common and extremely variable in its wide range from Central America to the Eastern Cordillera of Colombia and to southwestern Ecuador. Since the earliest known collection of this species in 1984, it had been treated as a variation of *M. nidifica*, and an illustration was included with *M. nidifica* in *Thesaurus Masdevalliarum*-10.

Similar to *M. nidifica*, the somewhat smaller, subglobose, sepaline tube is translucent white and suffused with purple on the lateral sepals. The orifice to the sepaline tube is more constricted than in usual variations of *M. nidifica*. Most distinctive, however, is the transversely triangular, acutely deflexed apical segment of the lip with acute lateral angles and acute apex.



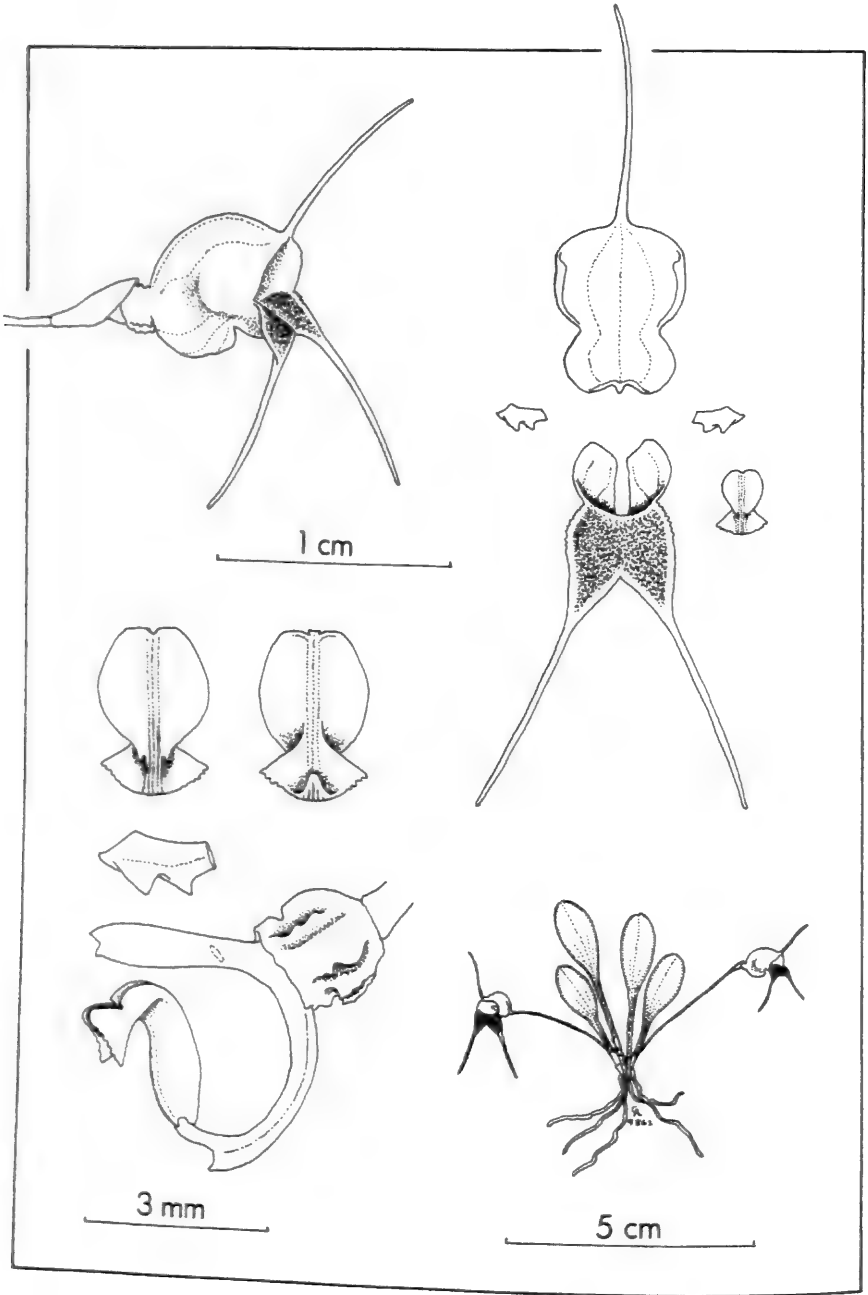


Plate 634. *Masdevallia bucculenta*

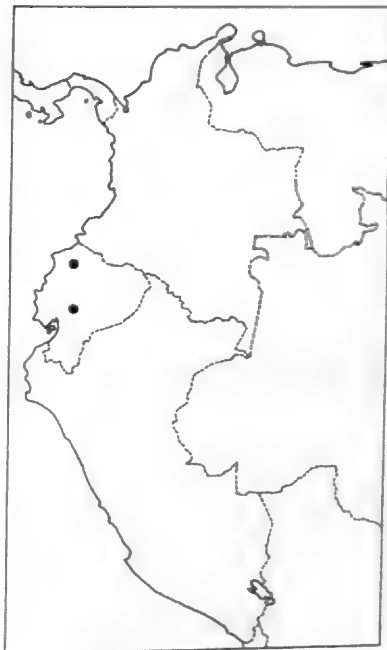
Masdevallia dynastes Luer, *Phytologia* 42: 459, 1979.

Ety.: Named for the coleopteran genus *Dynastes* in allusion to the rhinoceros beetle-like appearance of the flowers.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls green with purple dots, slender, erect, 1.5-2.5 cm long, enclosed by 2-3 close, tubular sheaths. **Leaf** erect, coriaceous, petiolate, 7-10.5 cm long including the petiole 2-3.5 cm long, the blade elliptical, subacute, 1-1.3 cm wide, the base gradually narrowed into the channeled petiole. **Inflorescence** a solitary flower borne by an erect, slender peduncle 6.5-10.5 cm long, with a bract below the middle, from low on the ramicaul; floral bract inflated, 6 mm long; pedicel 6 mm long, with a well-developed filament ca. 4 mm long; ovary 3 mm long, 3 mm wide, with 6 overlapping, undulating crests, green, intensely spotted with dark purple; **sepals** fleshy, glabrous, light green, diffusely covered by small dots and dashes of purple-brown, the dorsal sepal concave, subquadrate, 10 mm long, 10 mm wide, connate to the lateral sepals for 7 mm to form a subglobose, sepaline cup, the free part transversely ovate, the obtuse apex contracted into a thick, orange, clavate tail 7 mm long, the lateral sepals more or less oblong, concave basally, 13 mm long, 4 mm wide, connate 2 mm and connate to the column-foot for 7 mm to form a deep, subglobose mentum, the sub-acute apices contracted into thick tails 7 mm long; **petals** greenish white, pentangular, 5 mm long, 1.5-2.5 mm wide, the apex yellow, acute, the labellar margin with a thickened, obtuse angle above the middle and a larger, acute angle below the middle, the base unguiculate, inserted obliquely onto the lower portion of the column; **lip** yellow, marked with red-brown, ovate-triangular, 6 mm long, 4.5 mm wide, with marginal folds above the middle, the epichile suborbicular with revolute margins, the hypochile ovate, shallowly sulcate centrally, the base truncate, thickened, deflexed, hinged below; **column** greenish white, semiterete, 6 mm long, with a curved foot 7 mm long with a short extension.

ECUADOR: **Bolívar**: epiphytic in cloud forest between Guaranda and Balzapamba, alt. ca. 2500 m, Aug. 1978, collected by A. Hirtz, A. Andreetta, J. Luer & C. Luer, flowered in cultivation by A. Hirtz in Quito, 5 Feb. 1979, *C. Luer 3846* (Holotype: SEL; Isotype: JAUM); between Salinas and La Palma, alt. 2000 m, 10 Mar. 1991, *C. Luer, J. Luer, A. Hirtz et al. 14961* (MO). **Imbabura**: epiphytic in cloud forest between Otavalo and Apuela, alt. 2250 m, 8 Feb. 1979, *C. Luer, J. Luer, R. Escobar & A. Hirtz 3940* (JAUM, SEL); Selva Alegre, alt. 1400 m, *A. Hirtz & X. Hirtz 4242* (MO); terrestrial on road-cut, Selva Alegre, alt. 1900 m, 16 Mar. 1990, *S. Dalström & L. Årnby 1482* (MO). Without collection data, *F.C. Lehmann 317, t. 275* (K).

This species occurs locally on the western slopes of the Andes of Ecuador. The subglobose, brown-speckled flower with short, clavate tails is reminiscent of one of the flowers from a raceme of *M. pachyura*, but the single-flowered peduncle; the thick, many-angled petals; and the long, curved column-foot immediately distinguish it.



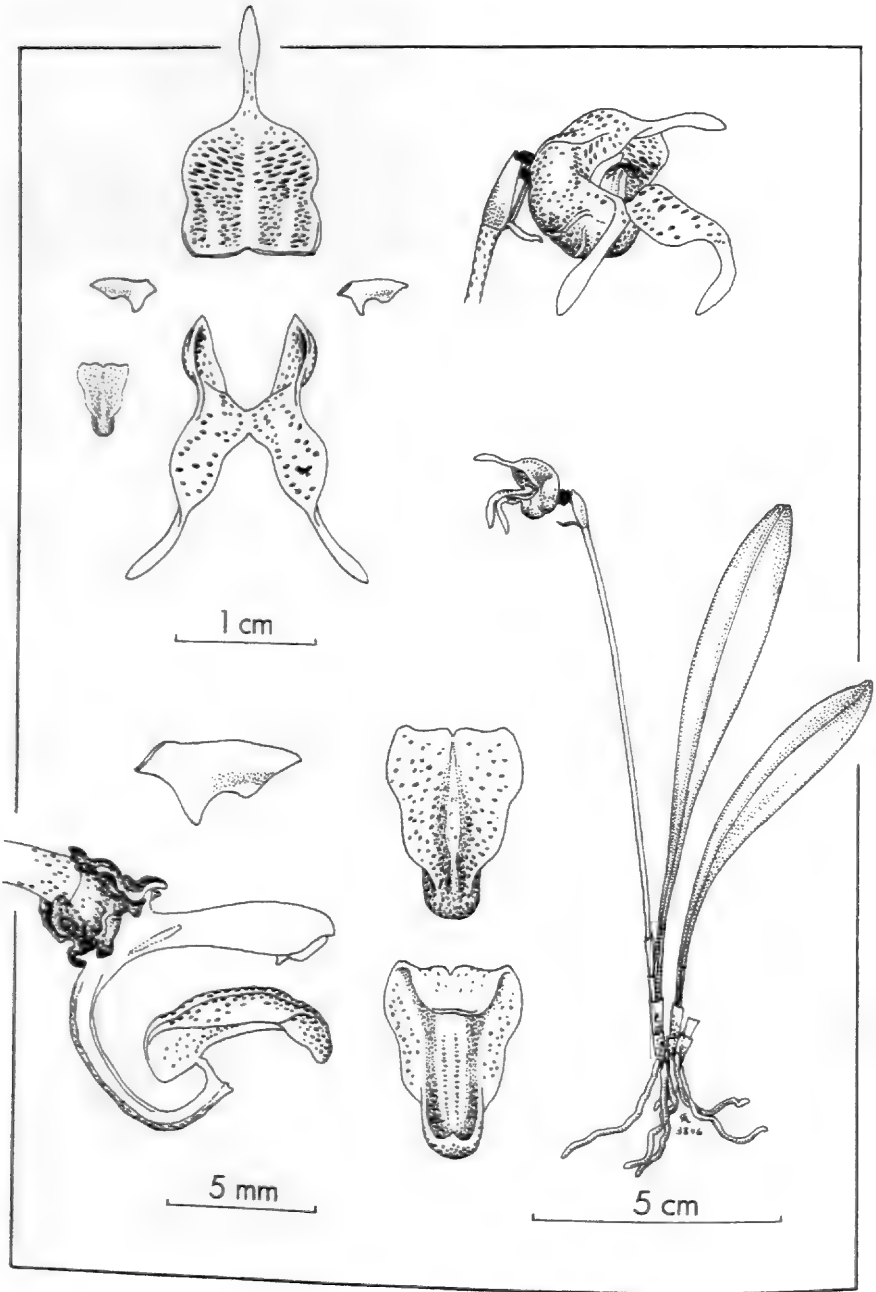


Plate 635. *Masdevallia dynastes*

Masdevallia lamia Luer & Hirtz, *Lindleyana* 3: 40, 1988.

Ety: From the Greek *lamia*, "a bugbear," referring to the goblinlike appearance of the flower.

Plant very small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1.5-2 mm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, coriaceous, narrowly elliptical, subacute, 13-17 mm long including the petiole 2-3 mm long, 5-6.5 mm wide, the base cuneate into the petiole. **Inflorescence** a solitary flower borne by a slender, erect peduncle, 17-20 mm long, with a bract near the base, from low on the ramicaul; floral bract 2.5-3 mm long; pedicel 2.5-3 mm long; ovary 3 mm long, 3-winged; **sepals** snow white, glabrous, the dorsal sepal obovate, concave, 4.5 mm long, 4 mm wide expanded, connate to the lateral sepals for 4 mm to form a gaping sepaline tube constricted near the middle, inflated below the middle, the free margin minutely erose, the apex transversely obtuse, abruptly contracted into a clavate, yellow tail 4 mm long, the lateral sepals connate ca. 2 mm to form an inflated mentum with the column-foot, 5 mm long, the blades beyond the constriction ovate, oblique, 3.5 mm long, 2.5 mm wide, the subacute apices contracted into clavate tails similar to that of the dorsal sepal; **petals** white, oblong, obtuse, 2 mm long, 1 mm wide, longitudinally carinate above the labellar margin, the carina with a triangular, oblique, obtuse wing near the middle, and a low, broadly obtuse wing below the middle, the opposite margin with a small, triangular angle below the middle; **lip** yellow, oblong-pandurate, 2.75 mm long, 1.3 mm wide, with erose, marginal folds above the middle, the disc shallowly channeled, the epichile ovate, obtuse, recurved, the margins lightly erose, the hypochile oblong, truncate, hinged from beneath; **column** white, semiterete, 2 mm long, the foot curved, 2 mm long, with a short, thick, incurved extension.

ECUADOR: **Esmeraldas**: epiphytic in cloud forest west of Lita, alt. 750 m, 18 Jan. 1987, C. Luer, J. Luer, C.H. Dodson, A. Hirtz, D. Benzling & D. Bermudes 12383 (Holotype: MO). **Carchi**: east of the pass east of Maldonado, alt. 2450 m, 15 Jan. 1992, C. Luer, J. Luer, A. & P. Jesup 16037 (MO).

This little species occurs uncommonly and locally in forests of northwestern Ecuador where it was first found by Alexander Hirtz. Although most closely allied to the common, variable, and widely distributed *M. nidifica*, *M. lamia* is also similar to the Costa Rican *M. mollosoides*. The pale flower of *M. lamia* is slightly smaller than the often colorful flowers of either of the above. In common with other related species, the sepaline tube is inflated both above and below a deep central constriction.

The sepaline tails of *M. nidifica* are long and slender, while those of *M. mollosoides* are thick, clavate, and shorter than the blade. The thick tails of *M. lamia* are about as long as the blades, while the clavate tails of *M. mollosoides* are shorter than the blades. The petals and lips of all three species are basically similar.

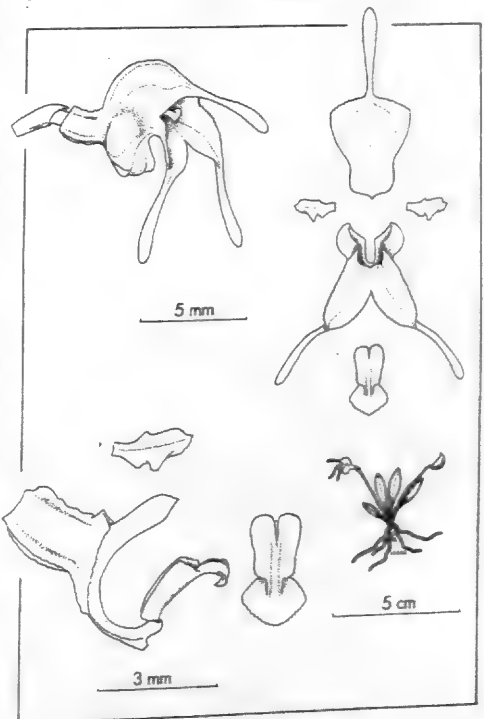


Plate 636. *Masdevallia lamia*

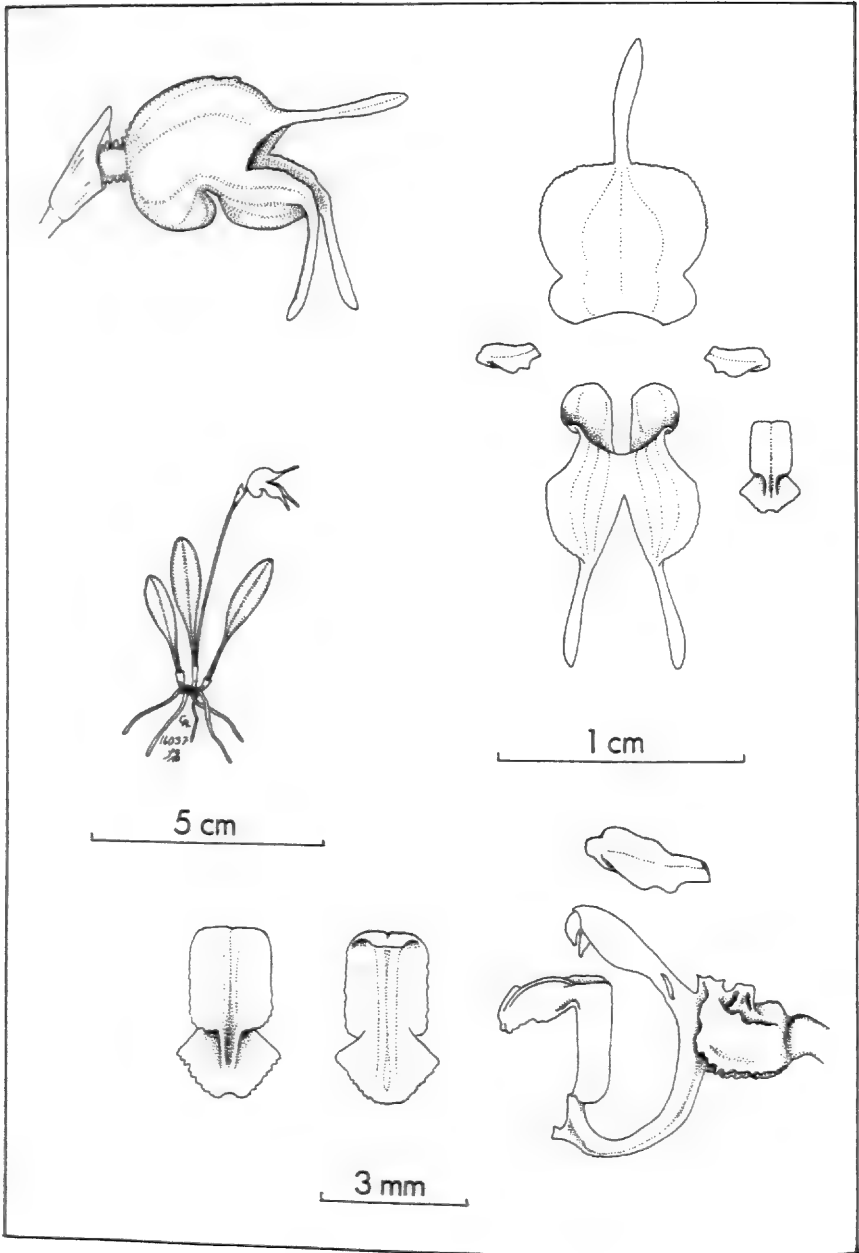


Plate 637. *Masdevallia lama*

Masdevallia molossoides Kraenzl., *Repert. Spec. Nov. Regni Veg.* 17: 416, 1921.

Ety.: From for the similarity of the species to *Masdevallia molossus* Rchb.f.

Syn.: *Masdevallia anura* Kraenzl., *Repert. Spec. Nov. Regni Veg.* 17: 433, 1921.

Ety.: From the Greek *anura*, "without a tail," referring to the tailless sepals.

Syn.: *Masdevallia rhopalura* Schltr., *Repert. Spec. Nov. Regni Veg. Beih.* 19: 14, 1923.

Ety.: From the Greek *rhopalura*, "clubbed tail," referring to the clavate, sepaline tails.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 5-10 mm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, coriaceous, 1.5-3.5 cm long including the petiole 0.5-1.5 cm long, the blade elliptical, subacute to obtuse, 0.5-0.8 mm wide, narrowly cuneate below into the petiole. **Inflorescence** a single flower produced by a slender, suberect peduncle 3-4.5 cm long, with a bract near the base, from the low on the ramicaul; floral bract tubular, 4 mm long; pedicel 2.5-4 mm long; ovary 2.5 mm long, with 6 crests; **sepals** yellowish, suffused and flecked with purple-brown, minutely pubescent within, with minutely ciliate margins, the dorsal sepal oblong-cuneate, concave, denticulate-carinate, 6 mm long, 7 mm wide expanded, connate to the lateral sepals for 5 mm to form a broad, sepaline tube, the apex transverse, abruptly contracted into a stout, forwardly directed deflexed tail 3-5 mm long, with the apex orange, clavate, the lateral sepals obovate, oblique, 10 mm long, connate for 4 mm into a lamina 7 mm wide, the apices subacute, contracted into clavate tails 3 mm long, the base inflated around the elongated column-foot; **petals** purplish, oblong, 3 mm long, 1 mm wide, the apex acute, the labellar margin with a longitudinal callus, obtuse and winglike near the middle, ending in an obtuse process above the unguiculate base; **lip** purple, erect, oblong-pandurate, 4.5 mm long, 2.25 mm wide, with marginal folds above the middle, the epichile rounded, serrate-denticulate, the basal two-thirds (hypochile) oblong, shallowly sulcate, the base subtruncate, hinged beneath; **column** green suffused with purple, semiterete, 3.5 mm long, with a curved foot 5 mm long, with an incurved extension.

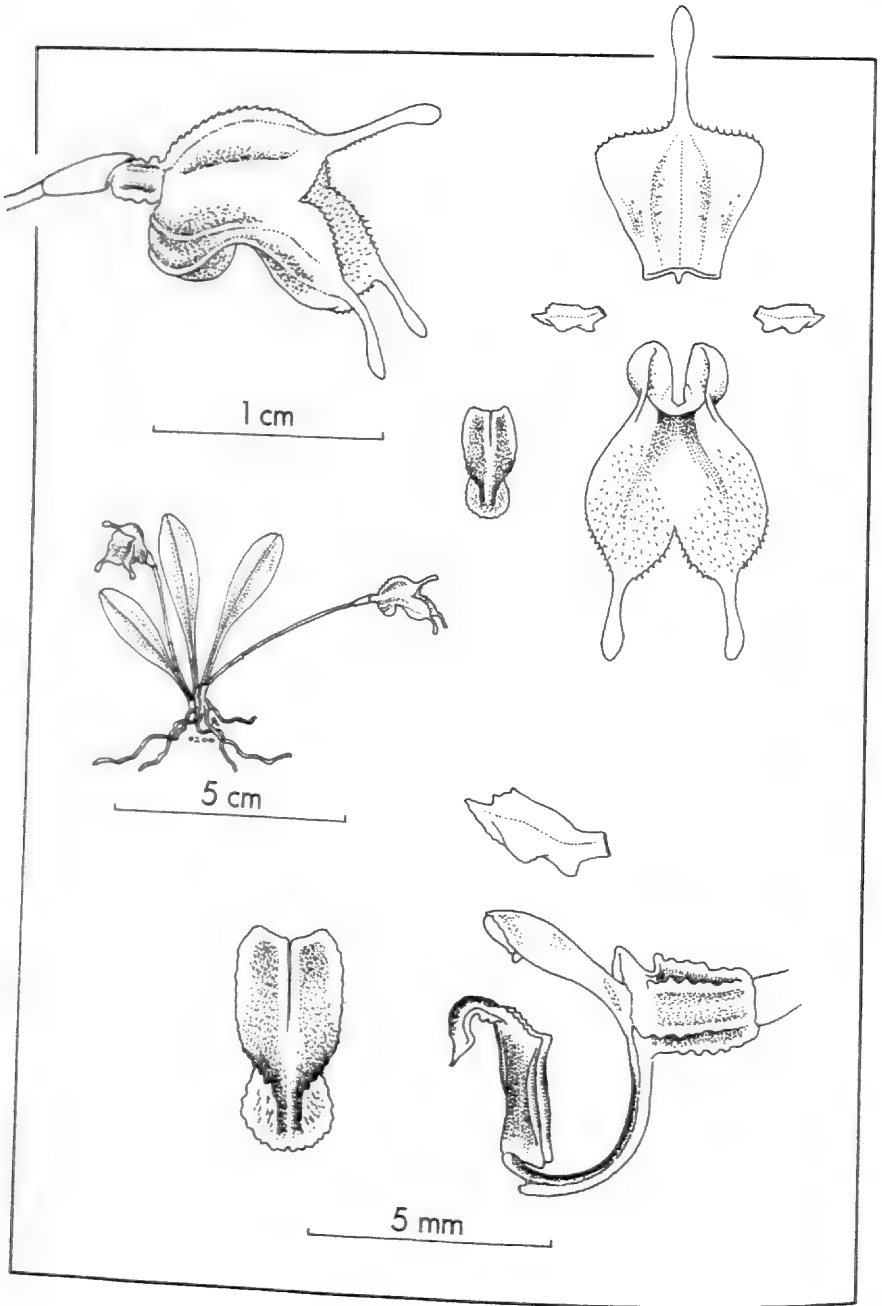
COSTA RICA: Without locality, alt. 3,500 ft., 1867, A. Endres s.n. (Holotype: W). **Alajuela:** San Ramón, San Carlos road, alt. 4,000 ft., 1867, A. Endres 21 (holotype of *M. anura*: W); Los Angeles de San Ramón, alt. 1050 m, July 1921, A.M. Brenes 47 (AMES, CR); La Palma de San Ramón, alt. 1250 m, 16 Sept. 1924, A.M. Brenes 2309 (CR). **Cartago:** La Palma, alt. 2500 m, C. Wercklé 76 (holotype of *M. rhopalura* destroyed at B); La Palma, Apr. 1910, C. Wercklé 677 (CR); Navarro, 29 July 1946, C.H. Lankester s.n. (AMES); Tapantí, Río Macho, alt. 1400-1500 m, 1982, R. Escobar, R. Moran & D. Mora de Retana 3150 (CR, SEL), cultivated at Colombrorquí-deas, 20 Apr. 1988, C. Luer 13270 (MO). **Heredia:** Vara Blanca between Poás and Barva, alt. 1680 m, Apr. 1938, A. Skutch 3757 (AMES, K, MO, S); above San Jeronimo, alt. 1800 m, 18 Sept. 1979, C. Luer, J. Luer & K. Walter 4200 (SEL); Atlantic slope of Volcán Barva between Río Peje and Río Sardinal, alt. 1300-1500 m, 10 Nov. 1986, M.H. Grayum, C. Hauffler & M. Roos 7763 (CR, MO). **Guanacaste:** Rincón de la Vieja, alt. 1200 m, 23 Nov. 1987, G. Herrera 1372 (CR, MO); Monteverde, between Santa Elena and San Gerardo, alt. 1540, 20 Aug. 1988, W. Haber & W. Zuchowski 8607 (CR, MO). **San José:** La Hondura, alt. 1300-1700 m, 2 Mar. 1924, P.C. Standley 36527 (AMES); La Palma de San José, alt. 1400-1500 m, 26 Feb. 1978, C. Todzia 156 (CR); Parqué Nac. Braulio Carrillo, Vásquez de Coronado, trail to Río Hondura, alt. 1250 m, 11 Jan. 1991, S. Ingram & K. Ferrell 848 (CR, SEL). **Puntarenas:** Monteverde Reserve, alt. 1500 m, 8 July 1992, S. Ingram, K. Ferrell-Ingram 1462 (MO, SEL).

NICARAGUA: **Jinotega:** south end of Loma La Ruleta, between Matagalpa and Jinotega, alt. 1500 m, A. Heller 6328 (SEL); Cerro Diablo, alt. 1500 m, A. Heller 8164 (SEL).

PANAMA: **Chiriquí:** Fortuna dam, alt. 1700 m, 13 Sept. 1977, J.P. Folsom & R.L. Dressler 5425 (MO).



Kraenzlin described this species twice from two collections of Endres about 50 years after they were sent to Reichenbach from Costa Rica ca. 1870. Schlechter described it again two years later from a much later collection by Wercklé. The species is not infrequent in Central America from Nicaragua to Panama. It is characterized by the constricted, sepaline tube with short, clavate tails. It is similar to *M. molossus* of the Andes of Colombia, but the latter is distinguished by vestigial, sepaline tails. The petals and lips of the two species are similar.

Plate 638. *Masdevallia molossoides*

Masdevallia molossus Rchb.f., *Linnaea* 41: 10, 1877.

Ety.: Named for Molossus, a genus of small bats, referring to the grotesque appearance of the flower with its gaping orifice.

Syn.: *Masdevallia antioquiensis* Lehm. & Kraenzl., *Bot. Jahrb. Syst.* 26:456, 1899.

Ety.: Named for the department of Antioquia where the species was discovered.

Syn.: *Masdevallia schmidtchenii* Kraenzl., *Repert. Spec. Nov. Regni Veg.* 17:432, 1921.

Ety.: Named in honor of G. Schmidtchen who collected this species.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, suberect, 5-15 mm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect to suberect, coriaceous, 2.5-4.5 cm long including a petiole 0.5-2 cm long, the blade narrowly elliptical, subacute to obtuse, 7-10 mm wide, gradually narrowed below into the petiolate base. **Inflorescence** a small, solitary, horizontal flower borne by a slender peduncle 2-4.5 cm long, with a thin sheath near the base, from low on the ramicaul; floral bract thin, tubular, 5 mm long, enclosing the pedicel 2-3 mm long; ovary 3 mm long, 3-winged with erose margins; **sepals** yellow to orange above the middle, more or less orange suffused with purple below the middle, glabrous externally, minutely pubescent within above the middle, the free margins minutely erose-ciliate, the midveins low-carinate, the dorsal sepal oblong-obovate, 10 mm long, 6.5 mm wide, connate to the lateral sepals for 9 mm to form a cylindrical tube, inflated above and below a central constriction, the apex transversely triangular, contracted into a thick, orange tail 2 mm long, the lateral sepals 11 mm long, connate 9 mm into a concave lamina forming an inflated chin with the column-foot below a transverse fold below the middle, 8.5 mm wide expanded, the transversely triangular apices contracted into thick tails 2 mm long; **petals** translucent yellow, suffused and marked with red, oblong, 3 mm long, 1 mm wide, the subtruncate apex erose, apiculate, the labellar margin with a longitudinal lamella ending in the lower third; **lip** erect in the natural position, red-purple, oblong-pandurate, 4.5 mm long, 2.5 mm wide, with erose-denticulate marginal folds above the middle, lightly channeled between, the epichile rounded, deflexed, with erose margins, the hypochile oblong, truncate at the base, hinged beneath; **column** green, suffused with red, semiterete, 3.5 mm long, the foot curved, 5 mm long including a short, incurved extension.

COLOMBIA: **Antioquia**: "Medellín," *Roehl s.n.* (Holotype: W); without locality, *G. Schmidtchen s.n.* (holotype of *M. schmidtchenii*: W); epiphytic in damp forest between San Gregorio and Nariño, alt. 1600-2000 m, Dec. 1891, *F.C. Lehmann 7227, t. 107* (holotype of *M. antioquiensis*: K; isotype: HBG); Cocorná, epiphytic in forest along Río Cocorná, El Viaha, alt. 1900 m, 24 Apr. 1983, *C. Luer, J. Luer, R. Escobar, M. Webb, A. Pridgeon & L. Vieira 8816* (SEL); Santo Domingo, epiphytic in forest east of Santo Domingo, alt. 2170 m, 12 May 1985, *C. Luer & R. Escobar 11345* (MO); Yarumal, road to El Cedro, 15 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14171* (MO). **Risaralda**: Pueblo Rico, Alto de Linea, alt. 2100 m, 11 May 1993, *C. Luer, J. Luer & R. Escobar 16787* (MO). **Valle del Cauca**: Monte La Guarida between Las Brisas and Albán, alt. 1950-2000 m, 16 Oct. 1946, *J. Cuatrecasas 22148* (AMES); epiphytic in forest, Alto de Calima, 26 June 1969, *P. Ortiz 245* (Herb. Ortiz).



Masdevallia molossus was described in 1877 by Reichenbach from plants first discovered by Roehl near Medellín, Colombia, where they are still locally abundant today. Lehmann also found the species near Medellín in 1891, and he made a watercolor painting of it with the intended epithet *Masdevallia mucronata* (No. 107, now at K with herb. no. 7227). Kränzlin based *M. antioquiensis* on this specimen.

This strange, little species is widely distributed in the western and central cordilleras of Colombia. Sometimes many dozens, if not hundreds, of the minute, caespitose plants are found literally covering the trunks of small trees and vines. The little brownish, broadly tubular flowers are constricted near the middle; the tails are mere thickened apicula; and the lip stands erect from the tip of a long, curved column-foot that forms the back of the inflated base of the sepaline tube.

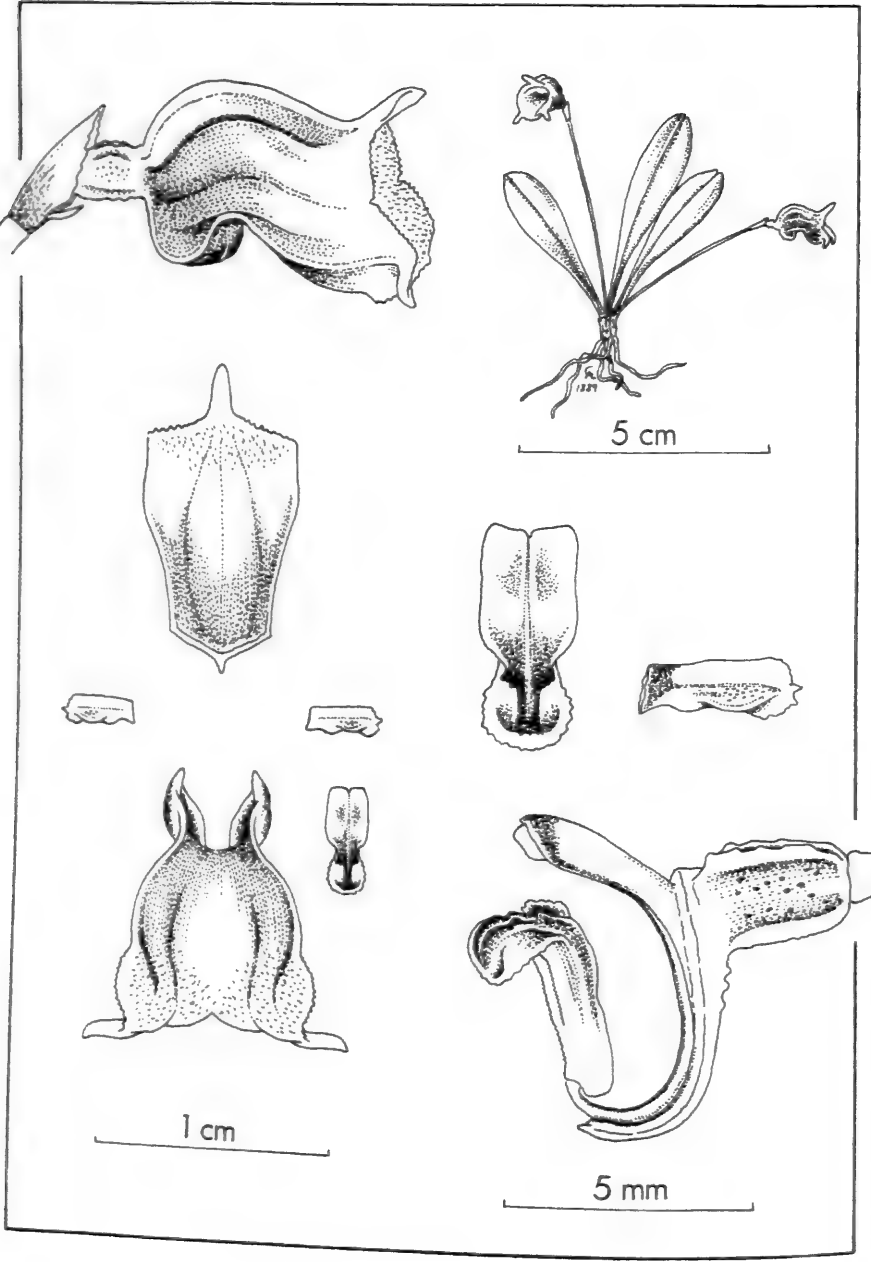


Plate 639. *Masdevallia molossus*

Masdevallia nidifica Rchb.f., *Otia Bot. Hamburgensia* 1: 18, 1878.

Ety.: From the Latin *nidificus*, "making a nest," alluding to the habit of the plant.

Syn.: *Masdevallia cyathogastra* Schltr., *Beih. Bot. Centralbl.* 36, 2: 383, 1918.

Ety.: From the Greek *cyathogaster*, "a cuplike belly," referring to the sepaline tube.

Syn.: *Masdevallia tenuicaudata* Schltr., *Repert. Spec. Nov. Regni Veg. Beih.* 19: 15, 17, 1923.

Ety.: From the Latin *tenuicaudatus*, "thin tailed," referring to the sepaline tails.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect to suberect, slender, 5-10 mm long, enclosed by 2-3 tubular sheaths. **Leaf** erect to suberect, coriaceous, petiolate, 3-6 cm long including the 1-3 cm long petiole, the blade elliptical, obtuse to subacute, 4-10 mm wide, cuneate below into the slender petiole. **Inflorescence** a solitary flower, sometimes produced in profusion, borne by a filiform, suberect peduncle 3-6 cm long, with a bract above the base, from low on the ramicaul; floral bract 3-5 mm long, subcucullate; pedicel 3 mm long; ovary 1-1.5 mm long, 2-2.5 mm wide, with 6 irregular-rose crests; **sepals** thin, translucent white to dull rose, more or less suffused or marked with red-purple, the margins more or less cellularly denticulate or erose, carinate along the midvein externally, glabrous, the dorsal sepal subpandurate, concave, 5-9 mm long, 6-9 mm wide expanded, connate 3-5 mm into an inflated, sepaline tube, constricted near the middle on the lower half, the apex transverse to broadly obtuse, abruptly contracted into a slender tail 8-30 mm long, the lateral sepals subpandurate, oblique, 6-12 mm long, 2.5-5 mm wide, connate 3-4 mm across a sharp, transverse fold, the base below the fold dilated, forming with the column-foot the bulbous base of the sepaline tube, the acute apices contracted into slender tails 8-26 mm long; **petals** white, often marked with purple, oblong-multangular, 2-3 mm long, 1 mm wide, the apex acute, the upper margin more or less obtusely angled in the distal third, the labellar half with a suberect, acute to obtuse, triangular carina from near the middle, the labellar margin with a deflexed, acute to obtuse angle on the basal half; **lip** yellow or rose, marked with purple, subpandurate, arcuate, erect, 2.5-5 mm long, 1.5-2.25 mm wide, the margins of the hypochile overlapping the epichile, ending in an acute angle or erose margin, the epichile triangular to flabellate with the apex recurved, more or less erose, the hypochile oblong, more or less dilated, the base truncate, hinged on the end; **column** white, often marked with purple, semiterete, 3-4 mm long, the curved foot 6 mm long with a thick incurved extension.

ECUADOR: **Pichincha**: Quito, west slopes of Pichincha, alt. 6,000 ft., Mar. 1877, *F.C. Lehmann* 24 (lectotype here designated: W); without collection data, *W. Jameson s.n.* (W); Andes of Quito, alt. 6,000 ft., Aug-Sept. 1856, *W. Jameson* 622 (P); Río Silanti, western slopes of Mt. Corazón, alt. 1800-2000 m, 11 Jan. 1881, *F.C. Lehmann* 314 (G); forest of Milligalli, Canchacato, alt. 1600-2100 m, *F.C. Lehmann* 7028 (AMES, K); Calacalí, alt. 1800-2000 m, 28 Nov. 1880, *F.C. Lehmann* 322 (G, BR); between Quito and Santo Domingo, alt. 2000 m, 2 Feb. 1978, *C. Luer, J. Luer & A. Hirtz* 2436 (SEL); between Chiriboga and Santo Domingo, alt. 1200 m, 31 Mar. 1984, *C. Luer, S. Dalström, T. Höijer & A. Hirtz* 9838 (MO); same area, 1 Mar. 1986, *C. Luer, C. Dodson, A. Hirtz & A. Embree* 12076 (MO); Río Cinto west of Lloa, alt. 2200 m, 31 Mar. 1985, *S. Dalström* 1511 (MO); below Mindo, alt. 1500 m, 11 Nov. 1979, *C. Luer, J. Luer & A. Hirtz* 4719 (SEL); between San Miguel de los Bancos and Mindo, alt. 1450 m, 1 Apr. 1984, *C. Luer, S. Dalström, T. Höijer & A. Hirtz* 9862 (MO). **Carchi**: between Maldonado and Chical, alt. 1400 m, 17 Mar. 1991, *C. Luer, J. Luer, J. del Hierro, A. & X. Hirtz* 15105 (MO). **Cotopaxi**: west of El Corazón, alt. 1200 m, 18 Feb. 1979, *C. Luer, J. Luer & A. Hirtz* 4017 (SEL). **Imbabura**: Selva Alegre, alt. 1900 m, 16 Mar. 1990, *S. Dalström & L. Årby* 1480 (MO); Los Cedros Reserve, alt. 1700 m, 21 Jan. 1993, *S. Dalström, T. Höijer & H. Wanntorp* 1715 (MO); above García Moreno, alt. 1850 m, 1 Mar. 1992, *S. Dalström* 1596 (MO). **Manabí**: Montecristi, alt. 1200 m, 11 Oct. 1952, *F. Fagerlind & G. Wibom* 582 (S); Montecristi, alt. 600 m, *C.H. Dodson & G. Frymire* 133 (AMES, K, US). **Bolívar**: west of Salinas and La Palma, alt. 1150 m, 12 Mar. 1991, *C. Luer, J. Luer et al.* 15008 (MO). **El Oro**: above Santa Rosa, alt. 400-1000 m, undated, *F.C. Lehmann* 7029 (K, LE); cloud forest above Piñas, alt. 950 m, 20 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores* 10668 (MO); cloud forest west of Piñas, alt. 900 m, 8 Oct. 1979, *C.H. Dodson, A. Gentry & G. Shupp* 9003 (MO).



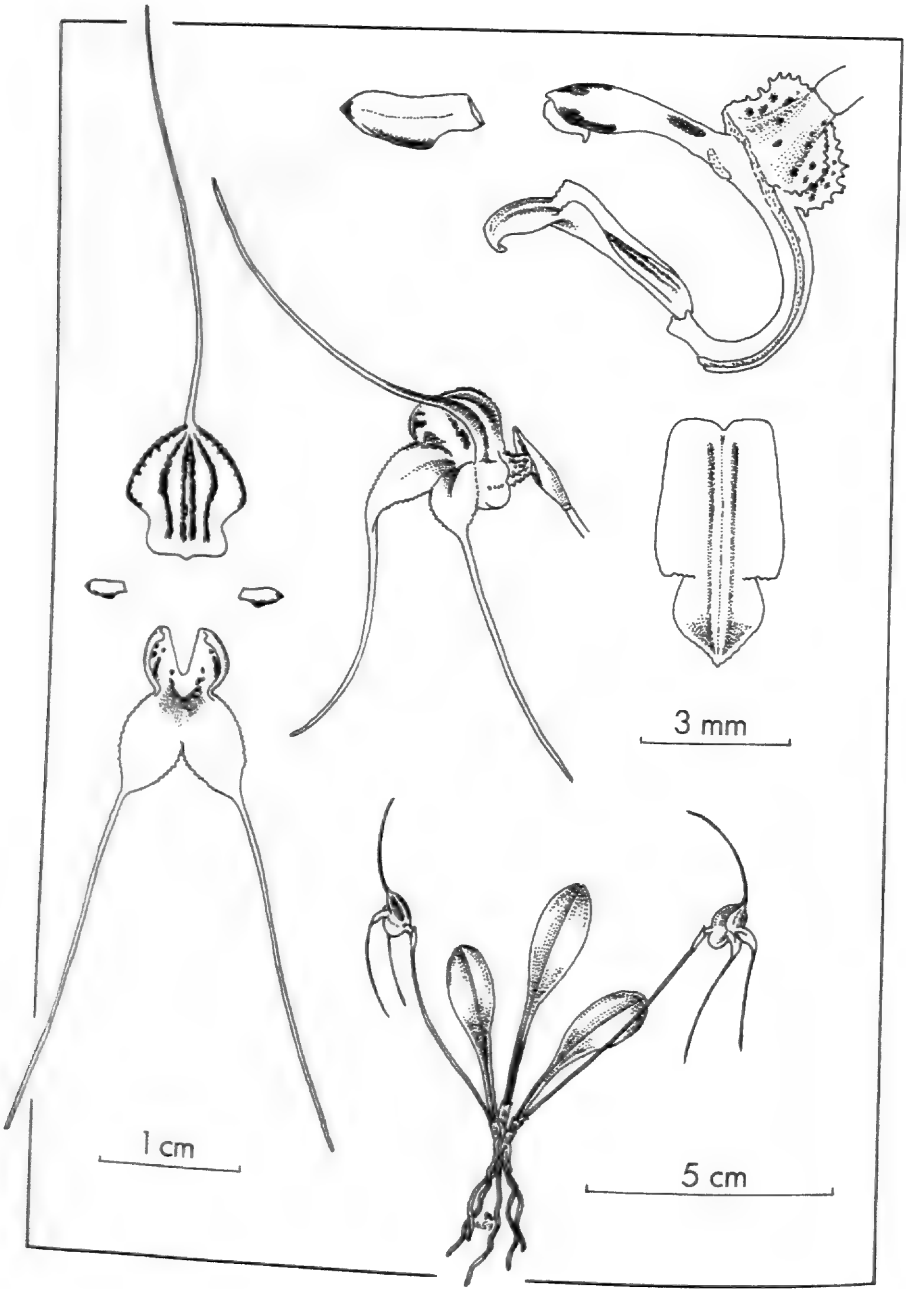


Plate 640. *Masdevallia nidifica*

SEL). **Azuay:** Cordillera del Molleturo, above Río Shumiral, alt. 800 m, 27 Jan. 1992, *C. Luer, J. Luer, A. Hirtz, A. & P. Jesup 16189* (MO). **Guayas:** Puente de Chimbo near Guayaquil, alt. 250 m, 8 June 1887, *F.C. Lehmann 6743* (K).

COLOMBIA: **Antioquia:** Frontino, alt. 1200-1700 m, Oct. 1881, *F.C. Lehmann 7027* (K); Parque Nacional Natural "Las Orquídeas," Río Calles, alt. ca. 1350 m, 24 Mar. 1988, *A. Cogollo, J.G. Ramírez & O. Alvares 2516* (JAUM, MO); Yarumal, road to El Cedro, alt. 1850 m, 15 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14173* (MO). **Norte de Santander:** Alto de Santa Inés, alt. 2150 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10346* (MO). **Valle del Cauca:** El Cairo, Cerro del Inglés, alt. 2260 m, 5 Jan. 1987, *F. Silverstone et al. 2997* (CUVC, MO). **Cauca:** west of Cali, alt. 1800-2000 m, 31 Dec. 1883, *F.C. Lehmann 3435* (G); highlands of Popayán, alt. 1600-2100 m, May 1878, *F.C. Lehmann s.n.* (K). **Nariño:** west of Túquerres, alt. 1500-2000 m, undated, *F.C. Lehmann s.n.* (KK346); San Pablo between Barbacoas and Pasto, alt. 1300 m, 25 July 1879, *F.C. Lehmann 131* (W).

NICARAGUA: **Jinotega:** top of Jinotega Grade, alt. 1520 m, *A. Heller 6329* (SEL). **Matagalpa:** Finca Bavaria, alt. 1200 m, *A. Heller 4083* (SEL).

COSTA RICA: Without locality, alt. 4500 ft., 1867, *A. Endres 19* (W, as *M. diaphana*). **Alajuela:** La Palma de San Ramón, alt. 1100 m, 24 Dec. 1924, *A.M. Brenes 229* (CR); La Palma, alt. 1500 m, Feb. 1913, *C. Wercklé 858* (CR); Los Angeles de San Ramón, alt. 1050 m, July 1921, *A.M. Brenes 42* (AMES, CR); El Silencio de Zarcero, alt. 1450 m, 29 Aug. 1938, *A.C. Smith II 1129* (AMES); San Ramón to Balsa, Quebrada Volio, alt. ca. 1100 m, 10 Sept. 1979, *W.D. Stevens 14226* (MO); Monteverde, Valle Peñas Blancas, alt. 700 m, 26 Oct. 1988, *E. Bello 199* (CR, MO); southeast of Cariblanco, Río Sarapiquí, alt. 750 m, 7 Nov. 1990, *S. Ingram & K. Ferrell 679* (CR, SEL, USJ); **Cartago:** between San Isidro and La Palma, alt. 1500 m, 22 Dec. 1881, *F.C. Lehmann 1859* (BM, BR, G, K); La Palma, *C. Wercklé 842* (holotype of *M. cyathogastra*: CR); La Palma, *C. Wercklé 80* (holotype of *M. tenuicauda* destroyed at B); near San Isidro, La Palma, alt. 1500 m, 22 Dec. 1881, *F.C. Lehmann 1059* (K); Cascajal, alt. 5,500 ft., June 1920, *C.H. Lankester s.n.* (K); Tapantí, alt. 1400-1500 m, 3 Aug. 1983, *R. Escobar, R. Moran & D. de Retana 3149* (CR, SEL); above Turrialba, alt. 900 m, 14 Mar. 1995, *C. Luer, J. Luer, J. Atwood & Dora Mora de Retana 17395* (MO); above San Cristóbal Norte, alt. 1780 m, 26 Mar. 1995, *C. Luer, J. Luer, J. Atwood & Dora Mora de Retana 17481* (MO). **Guanacaste:** Monteverde, Las Nubes, Atlantic slope, alt. 1300 m, 19 Jan. 1989, *W. Haber & W. Zuchowski 8977* (CR, MO); Río Chiquito de Tilarán, 30 July 1986, *W. Haber & E. Bello 5872* (MO). **Heredia:** Vara Blanca, alt. 1500 m, 1937, *A.F. Skutch 3171* (K, MO); Vara Blanca, alt. 1500-1750 m, July 1937, *A.F. Skutch 3171* (AMES, S). **San José:** Zurquí, alt. 2000-2500 m, *P.C. Standley & J. Valerio 48054* (AMES); La Honduras, alt. 1300-1700 m, 2 Mar. 1924, *P.C. Standley 36208, 36305, 36411, 36442, 36450, 36521* (AMES); La Palma de San José, alt. 1400-1500 m, 1 Mar. 1978, *C. Todzia 157, 180* (CR). **Puntarenas:** forest before Monteverde Preserve, alt. 1500 m, 18 Mar. 1986, *C. Luer, J. Luer & D. Dod 12104* (MO); Monteverde Reserve, SW station, alt. 1500 m, 17 Feb. 1992, *S. Ingram & K. Ferrell-Ingram 1334* (MO, SEL). **Limón:** confluence of Río Honduras and Río Sucio, alt. 450 m, 11 Feb. 1984, *M.W. Chase 84264* (CR); Talamanca, Bratsi, alt. 1300 m, 6 Mar. 1992, *G. Herrera 5173* (CR, MO).

PANAMA: **Chiriquí:** cloud forest around Fortuna, alt. 1100 m, 16 Feb. 1985, *C. Luer, J. Luer & R.L. Dressler 10573* (MO); Fortuna dam, Río Hornito, alt. 1100 m, 4 Dec. 1987, *G. McPherson 11778* (MO).

This species is variable and relatively common and in parts of its wide range from Central America to the Eastern Cordillera of Colombia and to southwestern Ecuador. Kränzlin credited Karsten with reporting *M. nidifica* from northern Peru, but no collection is known. The little, subglobose, sepaline tube is more or less translucent, and striped, spotted, flecked, or suffused with brown or purple. The dorsal sepal is deeply cucullate as it forms with the lateral sepals a constricted tube which is inflated below. The rounded base is formed by an elongated, curved column-foot.

The largest and most colorful variations are found on the western slopes of Pichincha in north-central Ecuador where the first collections were made by Dr. Jameson. The smaller, pale variations from Central America, first collected by Endres about 1867, were described by Schlechter as *M. cyathogastra* and *M. tenuicauda* from collections by Wercklé.

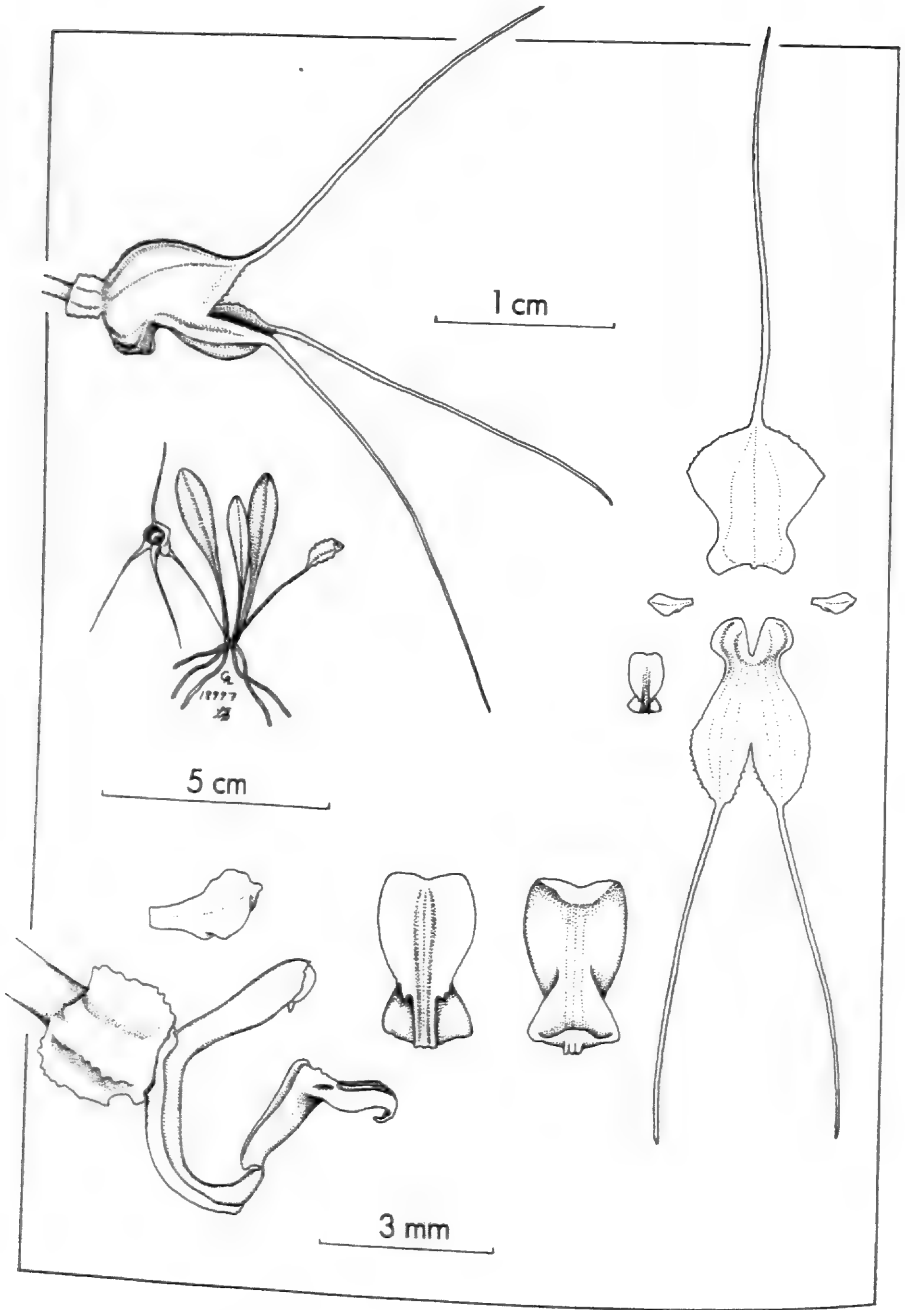


Plate 641. *Masdevallia nidifica*
 (*Masdevallia cyathogastra*
Masdevallia tenuicaudata)

Masdevallia ophioglossa Rchb.f., *Otia Bot. Hamburgensia* 1: 17, 1878.

Ety.: From the Greek *ophioglossa*, "a snake-tongue," for the illusion of the slender, snakelike lip.

Syn.: *Masdevallia grossa* Luer, *Phytologia* 47: 64, 1980.

Ety.: From the Latin *grossus*, "thickened, enlarged," referring to the thick tails.

Syn.: *Masdevallia ophioglossa* subsp. *grossa* (Luer) Luer, *Monogr. Syst. Bot. Missouri Bot. Gard.* 15: 15, 1986.

Plant small to very small, epiphytic, fasciculate-ascending to caespitose, roots slender. **Ramicauls** slender, 3-10 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, 1.5-7 cm long including a petiole 0.5-3 cm long, the blade narrowly obovate, subacute to obtuse, 0.3-1 cm wide, gradually narrowed below into the petiole. **Inflorescence** a solitary flower borne by a slender, erect peduncle 1.5-7 cm long, from low on the ramicaul; floral bract thin, 3-7 mm long; pedicel 1-3 mm long; ovary 1.5-2.5 mm long, with low, undulate wings; **sepals** white, glabrous, carinate, the dorsal sepal oblong, concave, 6-8 mm long, 2-5 mm wide expanded, connate to the lateral sepals for 5-7 mm to form a curved, cylindrical tube, the free portion contracted into a suberect, slender to stout, semiterete, yellowish tail 5-10 mm long, 1-2 mm thick, the lateral sepals connate 4-6 mm into a subpendurate, concave lamina 6-7 mm long, inflated at the base, 3-6 mm wide expanded, the free portions contracted into slender or stout, semiterete, yellowish tails 5-10 mm long; **petals** white, triangular to sigmoid-triangular, 2-3 mm long, 0.5-1.5 mm wide, the apex acute, sometimes minutely denticulate, the labellar margin with a broad, triangular, subacute lamella ending above the unguiculate base; **lip** white to light yellow, narrowly oblong-triangular, 3.5-4.5 mm long, 1-1.5 mm wide, with marginal folds above the middle, the epichile terete, minutely to coarsely verrucose, narrowly obtuse, the hypochile more or less oblong, shallowly channeled, the base subcordate, hinged beneath; **column** white, semiterete, 2.5-3 mm long, the foot curved, 2 mm long, with an extension 0.5 mm long.

ECUADOR: **Pichincha**: Quito, western slopes of Pichincha, alt. 6,000 ft., Mar. 1877, *F.C. Lehmann* 27 (Holotype: W); epiphytic near Canchacato and Silante, western slopes of Corazón, alt. 2000-2400 m, 13 Jan. 1881, *F.C. Lehmann* 310 (BM, BR, G, K, W); cloud forest above Tandapi between Quito and Santo Domingo, alt. 2000 m, 2 Feb. 1978, *C. Luer, J. Luer & A. Hirtz* 2437 (SEL); same area, 31 Mar. 1985, *C. Luer, J. Luer & A. Hirtz* 11019 (MO); cloud forest between Tandayapi and Mindo, alt. 1700 m, 5 March 1980, *C. Luer, J. Luer & Hirtz* 5211 (SEL); west slope of Pichincha, alt. 1800 m, Dec. 1988, *A. Hirtz* 3953 (MO). **Imbabura**: cloud forest of Selva Alegre, alt. 2350 m, 1 May 1981, *C. Luer, J. Luer & A. Hirtz* 6054 (SEL).

ECUADOR: **Azuay**: epiphytic on the western slopes of Azuay, 1972, collected by B. Malo, flowered in cultivation at Tarqui, 14 July 1977, *C. Luer* 1696 (holotype of *M. grossa*: SEL); flowered in cultivation at Tarqui, 25 May 1988, *C. Luer* 13680 (MO).

This little species is relatively frequent in wet forests of the western slopes of Ecuador. It is easily identified by the crested ovary, small, white, tubular flowers dilated at the base, and a lip with a narrow, verrucose epichile.

In the northern part of the distribution near and within the province of Pichincha, plants are usually smaller than those from farther south, near and within the province of Azuay. The latter was recognized as *M. grossa*. The flowers of plants from the south are also larger with thicker tails.

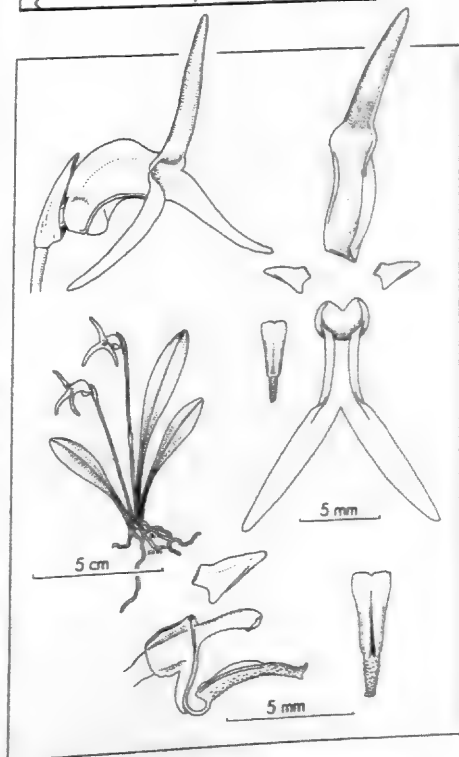


Plate 642. *Masdevallia ophioglossa*
(subsp. *grossa*)

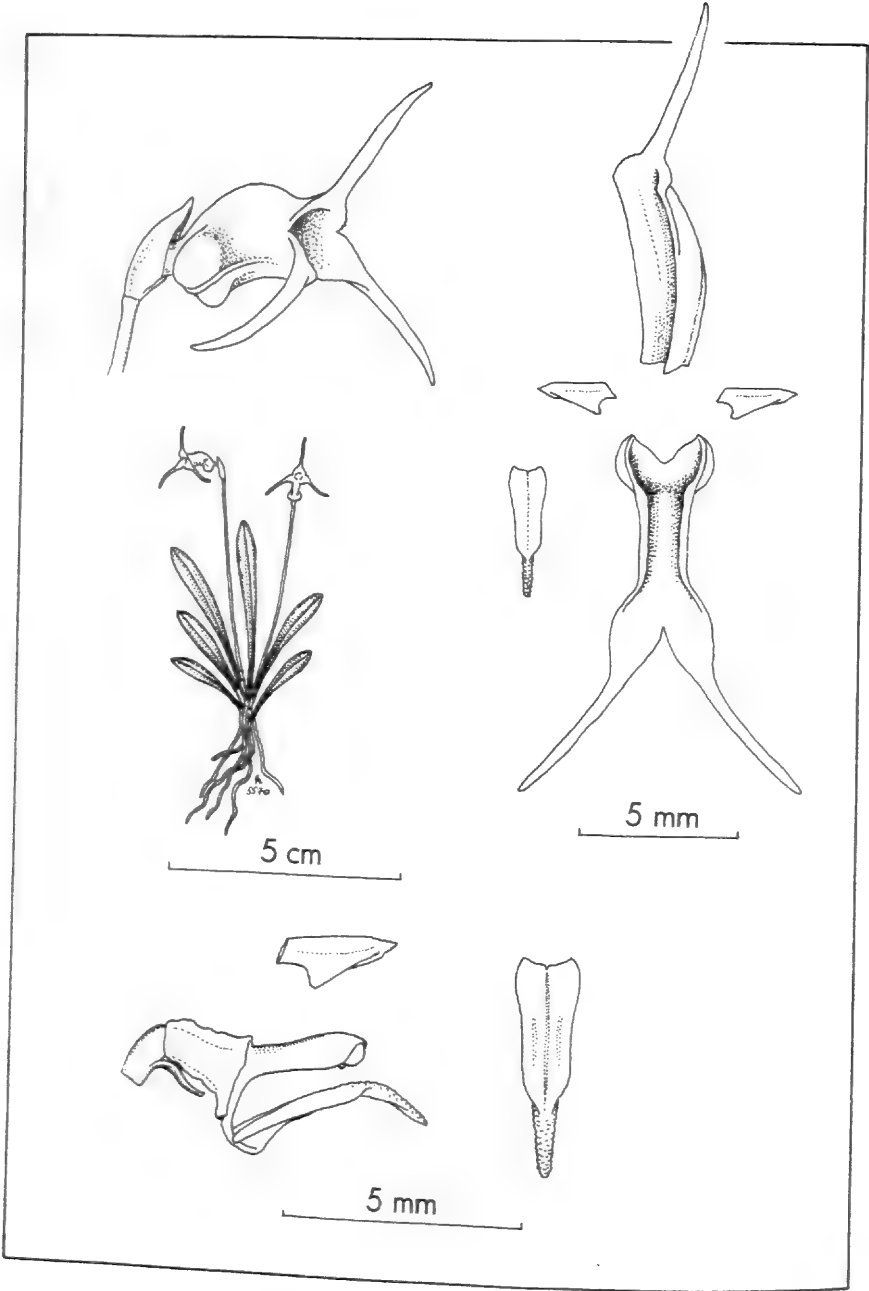


Plate 643. *Masdevallia ophioglossa*

Masdevallia strigosa .Königer, Die Orchidee 41: 142, 1990.

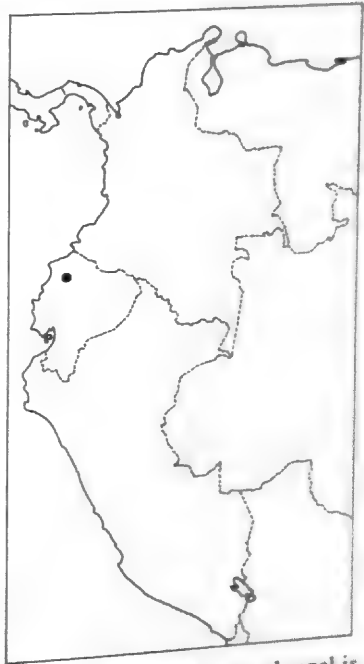
Ety.: From the Latin *strigosus*, "lean, scraggy," referring to the meagre habit.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1.5-2 cm long, enclosed by 2-3 tubular sheaths, **Leaf** erect, coriaceous, narrowly elliptical, subacute to obtuse, 3-4 cm long including the petiole 1.5-2 cm long, 0.8-0.9 cm wide, the base cuneate into the petiole. **Inflorescence** a solitary flower borne by a slender, erect, peduncle, 5-6 cm long, with a bract near the middle, from low on the ramicaul; floral bract 5 mm long; pedicel 4 mm long; ovary 2 mm long, tall-alate; **sepals** light green, glabrous, the dorsal sepal broadly ovate, deeply concave, 6 mm long, 9 mm wide expanded, 3-veined, connate to the lateral sepals for 3 mm to form a gaping, suborbicular, sepaline tube, the apex rounded, abruptly contracted into a clavate, yellow tail 6 mm long, the lateral sepals connate basally to form an inflated mentum with the column-foot, 10 mm long including tails 3 mm long, the blades beyond the constriction narrowly oblong, oblique, 2 mm wide, 1-veined, the apices subacute, contracted into slender tails ca. 3 mm long; **petals** membranous, hugging the column, translucent yellow, obovate, acute, acuminate, 2.5 mm long, 1 mm wide, 1-veined, ecarinate, unguiculate below the middle; **lip** orange, thin, oblong, obtuse, arcuate, 4 mm long, 2 mm wide, with sides erect, the disc longitudinally channeled, ending with the thickened midvein protruding at the apical margin, the base hinged from the end; **column** yellow, semiterete, winged above the middle, 3.5 mm long, the foot curved, 4 mm long, with a short, thick, incurved extension.

ECUADOR: **Pichincha**: between Quito and Mindo, alt. 1600 m, 2 Apr. 1988, flowered in cultivation in Munich, Germany, *W. Königer & H. Königer K-154e* (holotype of *M. strigosa*: M; isotypes: QCA, Herb. H. Königer), C. Luer illustr. 20445.

This little species is rare, known only from the original collection not far west of Quito. Although obviously allied to the common, variable, and widely distributed *M. nidifica*, it is also related to *M. lamia* and the Costa Rican *M. molossoides*. In common with them, the lip stands erect at the tip of a long, curved column-foot. *Masdevallia strigosa* was published without comment and without dimensions of the floral parts except that the dorsal sepal was five millimeters long. The present illustration was made from a dry flower hydrated in ammonia.

Masdevallia strigosa is characterized by an inflated, deeply concave, suborbicular, dorsal sepal, and narrow, single-veined, lateral sepals, all with relatively short tails. That of the dorsal sepal is thickened toward the apex. The tiny, translucent petals hug the sides of the column, with the dilated lower margins along the similarly dilated wings of the column. The lip is thin and arcuate with broad, thin, erect sides that prohibit expansion without folding or distortion. The column is winged, and the curved column-foot is nearly twice as long as the gynostemium (the body of the column).



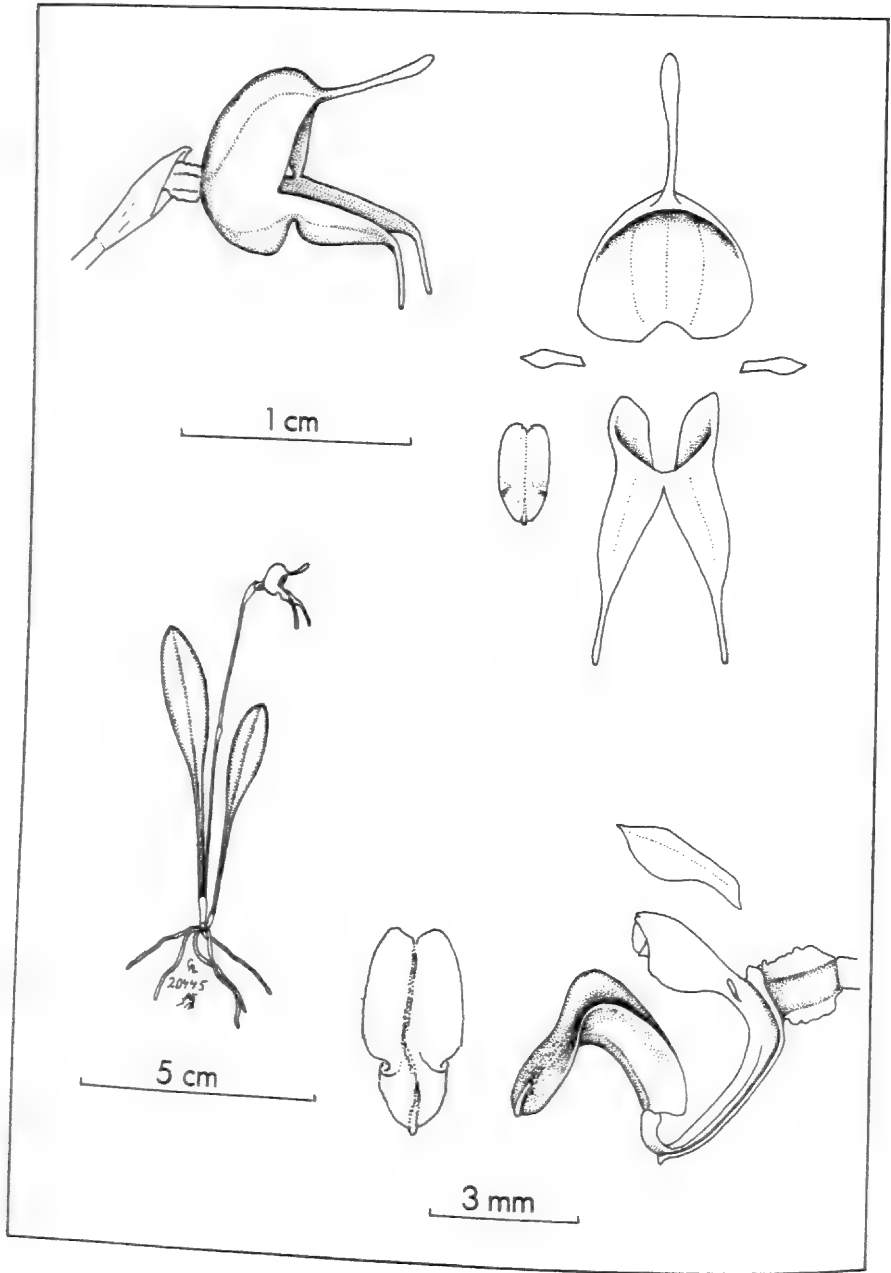


Plate 644. *Masdevallia strigosa*

Masdevallia ventricosa Schltr., *Repert. Spec. Nov. Regni Veg.* 14: 120, 1915.

Ety.: From the Latin *ventricosus*, "ventricose," referring to the sepaline tube.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect to suberect, slender, 10-15 mm long, enclosed by 2-3 tubular sheaths. **Leaf** erect to suberect, coriaceous, petiolate, 5-8 cm long including the 2-3.5 cm long petiole, the blade elliptical, obtuse to subacute, 8-11 mm wide, cuneate below into the slender petiole. **Inflorescence** a solitary flower borne by a slender, suberect peduncle 7-9 cm long, with a bract above the base, from low on the ramicaul; floral bract 6 mm long; pedicel 5 mm long; ovary 2 mm long, 3-crested; **sepals** thin, translucent yellow, with margins more or less minutely denticulate-erose, carinate along the midvein externally, glabrous, the dorsal sepal pandurate, concave, 8-10 mm long, 5-6 mm wide expanded, connate 5 mm into an inflated, sepaline tube, constricted near the middle on the lower half, the apex transverse to obtuse, abruptly contracted into a tail 8-10 mm long, the lateral sepals pandurate, oblique, 9-11 mm long, 2.5-3 mm wide, connate 2-3 mm across a sharp, transverse fold, the base below the fold dilated, forming with the column-foot the bulbous base of the sepaline tube, the acute apices contracted into slender tails 9-11 mm long; **petals** white, oblong, acute, 2.5 mm long, 1 mm wide, the margins sometimes minutely serrate, the labellar margin with a lamella above the middle, ending in an obtuse process above the unguiculate base; **lip** yellow, subpandurate, erect, 4 mm long, 2 mm wide, with obtuse, marginal folds above the middle, the epichile narrowly ovate-triangular with revolute margins, acute, the hypochile broadly oblong, sulcate centrally, the base truncate, hinged on the end; **column** white, semiterete, 3 mm long, the curved foot 4 mm long with an incurved extension.

ECUADOR: Pichincha: subandine forest near Canzacoto, Jan. 1892, A. Sodiro 32 (Holotype destroyed at B; Lectotype here designated: BR; Isolectotype P); western slopes of Pichincha, collected by A. Hirtz, flowered in cultivation at Colomborquídeas, 13 Mar. 1989, C. Luer 14242 (MO). **Chimborazo:** collected near Pallatonga, July 1997, flowered in cultivation 9 Nov. 1977, C. Luer 2140 (SEL). **Bolívar:** between Chillanes and San José de Tambo, San Vicente, alt. 1750 m, 18 Feb. 1991, C.H. Dodson, W.S. Stevenson, N. Williams, M. Whitten & A. Embree 18711 (MO).



This species is closely related to the frequent and widely distributed *M. nidifica*, but *M. ventricosa* occurs much less commonly and only on the western slopes of the Andes of central Ecuador. Vegetatively, it is slightly larger than *M. nidifica* and with longer peduncles. The similarly globose, inflated flowers are a pure yellow with consistently much shorter, slightly thicker, sepaline tails. The best distinguishing feature is the lip, the epichile of which is narrowly triangular instead of ovate or flabellate.

The dorsal sepal is deeply cucullate and connate to narrower lateral sepals to form a constricted tube which is inflated below. The rounded base is formed by an elongated, curved column-foot. From the free extension the lip is held erect within the flower. The petals are callous along the labellar margin, and the lip is divided by marginal folds into a narrowly triangular epichile and an oblong hypochile.

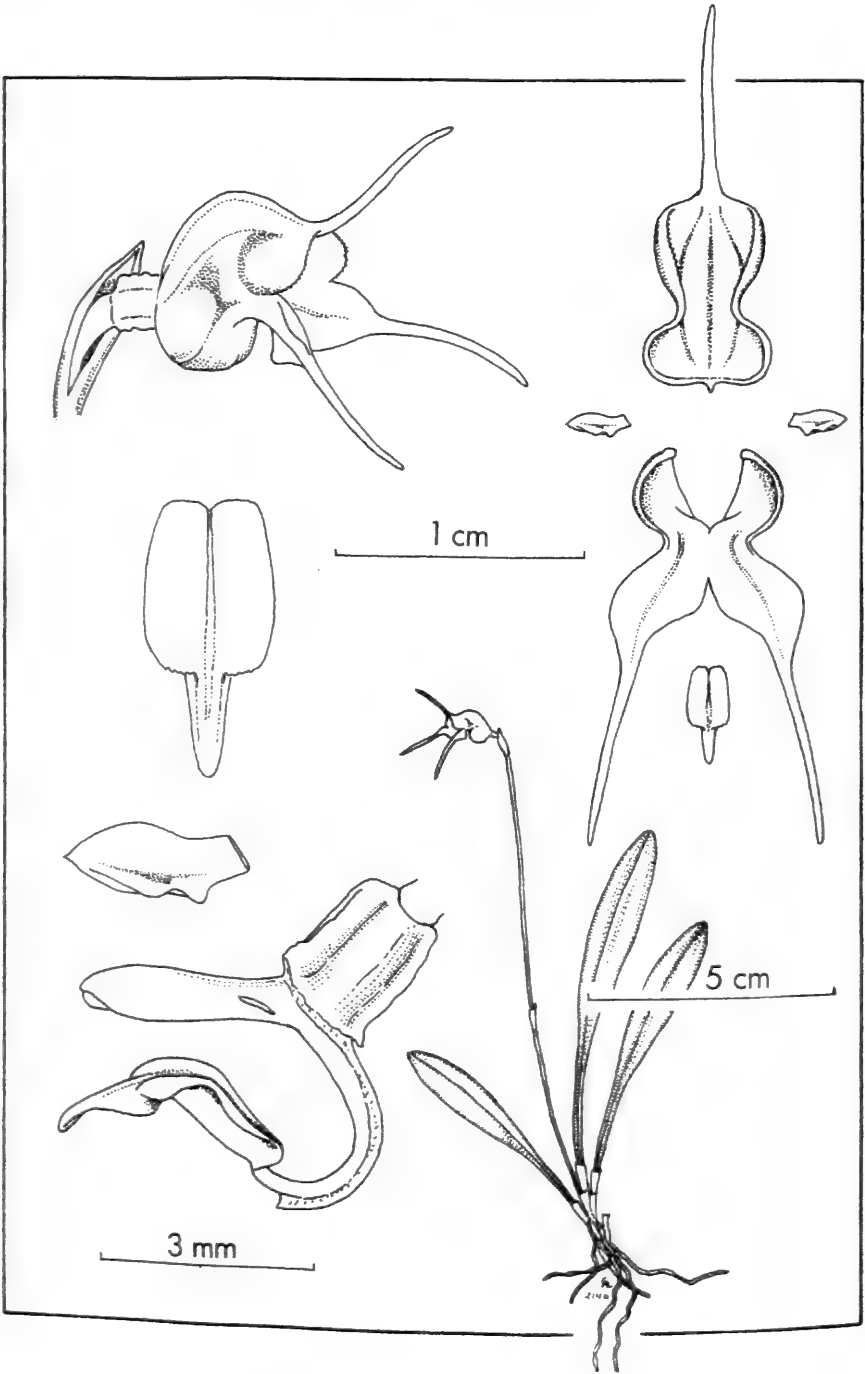


Plate 645. *Masdevallia ventricosa*

MASDEVALLIA SUBGENUS SCABRIPES

Masdevallia subgenus **Scabripes** Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 77: 10, 2000.

Type: **Masdevallia bicornis** Luer (*Portillia popowiana* Königer).

Ety.: From the Latin *scabripes*, "rough-footed," referring to the scabrous peduncle.

The description of the single species will suffice for the subgenus. It is characterized by a successively flowered inflorescence borne by a scabrous peduncle, and a minute hornlike process on either side of the lip above the base.

Masdevallia bicornis Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 64: 128, 1997.

Ety.: From the Latin *bicornis*, "with two horns," referring to the calli of the lip.

Syn.: *Portillia popowiana* Königer & J. Portilla, *Arcula* 6: 156, 1996, not *M. popowiana* Königer.

Ety.: Named for Nebojscha Popow who imported the species from José Portilla in Ecuador.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls stout, erect, 2-2.5 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, thinly coriaceous, 10-21 cm long including a petiole 3-5 cm long, the blade narrowly elliptical-obovate, subacute, 3-3.5 cm wide, the base narrowly cuneate into the petiole. **Inflorescence** a single, nutant flower, borne successively in a congested raceme by a more or less horizontal, scurfy peduncle 12-24 cm long, with 3 distant bracts, the peduncle covered by more or less branching scales, from near the base of a ramicaul; floral bracts tubular, oblique, 7-10 mm long; pedicels 8-12 mm long; ovary arcuate, smooth to minutely verrucose, 6-8 mm long; **sepals** red-brown with yellow tails, glabrous, subcarinate externally, the dorsal sepal triangular, 15 mm long, 12 mm wide, 3-veined, connate to the lateral sepals for 5 mm without forming a sepaline tube, the apex subacute, contracted into a forwardly directed, slender tail 40-45 mm long, the lateral sepals connate 18 mm into a broadly expanded, bifid, obovate lamina, 25 mm long, 24 mm wide, 6-veined, each half sulcate between a pair of longitudinal, obtusely subplicate convexities, the apices obtuse with the medial margins inflexed, contracted into slender tails 30-35 mm long; **petals** light yellow, cartilaginous, arcuate, oblong, 5 mm long, 1 mm wide at the center, the apex obtusely obliquely bilobed, 2 mm wide, the base with an acute, descending process 1.5 mm long, connate obliquely to the column just above the base; **lip** oscillating, dark brown, light brown at the base, with yellow calli, oblong-subpandurate, 7 mm long, 3 mm wide above the middle, 1.4 mm wide at the middle, the apex shallowly bilobed with the lobes rounded, the disc with a tall, grooved, obtuse lamina on the lower third, and sulcate above the middle between a longitudinal pair of calli, with a pair of acute, uncinat processes 1 mm long emerging from the lateral surface on the basal fourth, concave beneath, attached within with a short, thin strap to the column-foot; **column** light yellow, arcuate, semiterete, 8 mm long, narrowly winged above the middle, the foot thick with a short, thin, incurved extension.

ECUADOR: **Morona-Santiago**: El Pangui, alt. 1000 m, collected by J. Portilla, exported to N. Popow, purchased by *Königer WK-73* (Holotype: M; Isotypes reported: K, QCA); "Macas," alt. 700 m, A. Hirtz 6581 (MO), C. Luer illustr. 18609.



This species, endemic in lowland, eastern Ecuador, was collected in 1996 by José Portilla who exported plants to Popow in Germany. It is the only species of the genus with a scurfy peduncle. The

species was described in a unispecific genus by Königer without discussion. DNA analyses indicate a relationship with the genus *Masdevallia*.

Masdevallia bicornis is characterized by a short ramicaul; a large, petiolate leaf; and a successively flowered raceme. The long peduncle is covered by branching, scaly trichomes that are similar to those found covering the peduncles of some species of *Scaphosepalum*. Both smooth peduncles and scurfy or verrucose peduncles also occur within *Pleurothallis* and *Trisetella*.

The lateral sepals are connate into a synsepal with subplicate veins similar to those seen in *M. empusa*. The petals are arcuate with a pointed process, or tooth, at the base exactly as seen in several species of subsection *Oscillantes*. The lip is of the same basic design found in the subsection, with a tall, cleft callus closely resembling that of *M. cateptheres*.

A minute, pointed appendage arises from the sides of the lip above the base,

perhaps analogous to the lateral lobules found on the lips of *M. andreottana* and *M. persicina*. The lip is flexibly joined to the column-foot by a thin, strap-like hinge from the tip of the column-foot. It is attached within the concave undersurface of the base of the lip, in a manner identical to that of the species of subsection *Oscillantes*, to permit oscillation. The column is also similar to those of the species of the subsection.

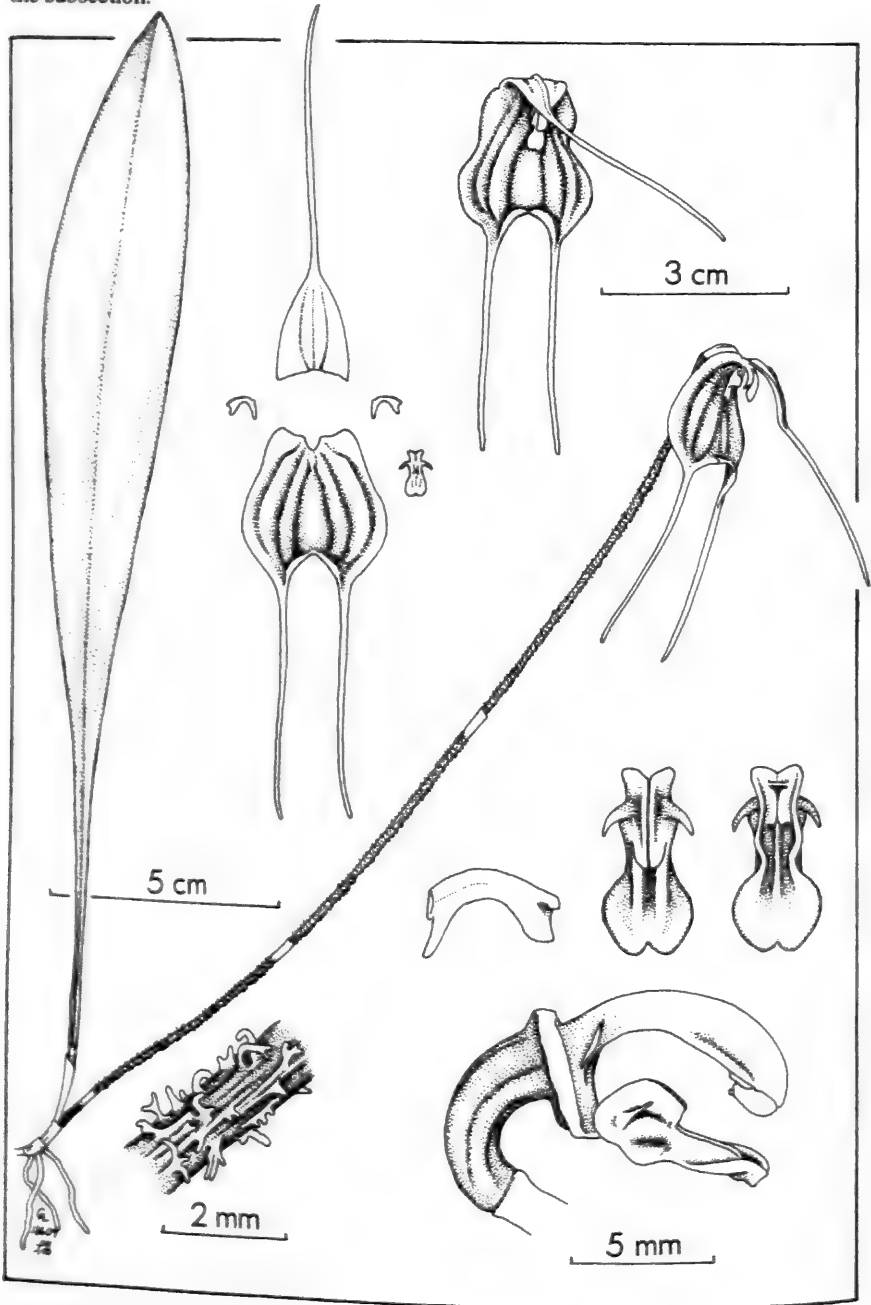


Plate 646. *Masdevallia bicornis*

MASDEVALLIA SUBGENUS TEAGUEIA

Masdevallia subgen. **Teagueia** Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 16: 53, 1986.

Type: *Masdevallia teaguei* Luer.

Ety.: Named for Walter Teague of San Francisco, CA, who first collected this species.

Syn.: *Jostia* Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 79: 2, 2000.

Ety.: Named for Louis Jost, ornithologist and orchidologist, who discovered the activity of the lip.

The single species attributed to this subgenus is distinguished by an actively mobile lip with a pair of large, flat plates covering the disc, and hinged around a thick column-foot by a thin strap. Although well on its way down another evolutionary path, DNA analyses indicate a relationship with *Masdevallia*.

Masdevallia teaguei Luer, Selbyana 2: 381, 1978.

Ety.: Named in honor of Walter Teague of San Francisco, California, co-discoverer of the species.

Syn.: *Masdevallia braasii* Mohr, Die Orchidee 35: 64, 1984.

Ety.: Named in honor of Lothar Braas, a contemporary author.

Syn.: *Jostia teaguei* (Luer) Luer.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls blackish, erect, slender, 2-6 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** dark green, erect, coriaceous, petiolate, 9-15 cm long including the slender, blackish petiole 3-4 cm long, the blade elliptical-ovate, subacute to obtuse, 2-3 cm wide, the base cuneate into the petiole. **Inflorescence** a congested, successively several-flowered raceme up to 3 cm long, borne by an erect, slender, terete peduncle 9-18 cm long, with a bract above the base and borne from above the base of the ramicaul; floral bracts loose, tubular, 8-15 mm long; pedicel 12-16 mm long; ovary 6 mm long; **sepals** red-brown to red-purple, yellow-orange toward the base, glabrous externally, microscopically red-pubescent within, the dorsal sepal obovate, 15 mm long, 9 mm wide, connate to the lateral sepals for 7 mm to form a gaping, funnel-shaped tube, the free portion ovate, the obtuse apex contracted into an erect, slender, yellow tail 17-20 mm long, the lateral sepals 18 mm long, connate 15 mm into an expanded, ovate lamina 19 mm wide, sharply constricted below the middle, forming a mentum below the column-foot and a secondary mentum above, the obtuse apices contracted into slender tails 7 mm long; **petals** connate to the lower third of the column, yellow, marked with red at the apex, elliptical, oblique, 6 mm long, 3 mm wide, the truncate apex apiculate or obscurely tridentate, both margins lightly dilated, the lower half with a short, thick, acute, retrorse callus above the base; **lip** red-orange, ovate, 6 mm long from the base to the apices of the plates of the disc, 3.75 mm wide, the disc deeply cleft down the center to form a pair of prostrate, microscopically scabrous, truncate plates overlying the rigidly decurved, rounded apical lobe 2.5 mm long, 2.25 mm wide with 3 tall, subverrucose lamellae, the base thickened, hinged below by a broad, thin strap to the bottom of the column-foot; **column** yellow, semiterete, 6 mm long, with the petals obliquely inserted below the middle, the foot 4 mm long, very thick, incurved, the apex sub-bulbous.

ECUADOR: Zamora-Chinchipe: epiphytic in cloud forest near Valladolid, alt. ca. 2300 m, July 1975, collected by W. Teague, L. Figueroa & D. Welisch, cultivated in San Francisco, Sept. 1978, *C. Luer 2035* (Holotype: SEL); epiphytic in cloud forest above Valladolid, alt. 2450 m, 18 Mar. 1984, *C. Luer, S. Dalström, T. Höijer, J. Kuijt & D. D'Alessandro 9583* (MO); same area, 23 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 10942* (MO). **Morona-Santiago:** Tinajillas, road to Limón, alt. 2100 m, collected by E. Sánchez, Jan. 1995, *A. Hirtz 6128* (MO); Plan de Milagro above Limón, alt. 1500 m, cultivated in Cuenca by E. Sánchez, 6 Mar. 2001, *C. Luer 19795* (MO). **Tungurahua:** Cerro Abitagua, alt. 2020 m, 17 June 1998, *L. Jost 1073* (MO).

In error: Colombia: Nariño, La Cocha, alt. 3000 m, *E. Waldvogel s.n.* (holotype of *M. braasii*, Herb. Mohr).



This species is found infrequently in southern Ecuador. The congested, successively flowered raceme, about as high as dark green, petiolate leaves, is borne by an erect, terete peduncle that originates above the base of the ramicaul. The petals, connate to the lower third of the column, possess a basal tooth.

The body of the lip consists of a broad hypochile composed of a pair of flat laminae separated by a deep cleft. A rigid, tricarinate epichile decurves from be-

neath the apex of the laminae. The thickened base of the lip rests on the edge of a markedly thickened end of the column-foot. A broad, thin strap originating from below the middle of the undersurface of the lip is inserted onto the backsurface of the thickened end of the column-foot. Gravity seems to hold the lip in the "open" position, but a tactile stimulus causes the lip to rise into a "closed" position.

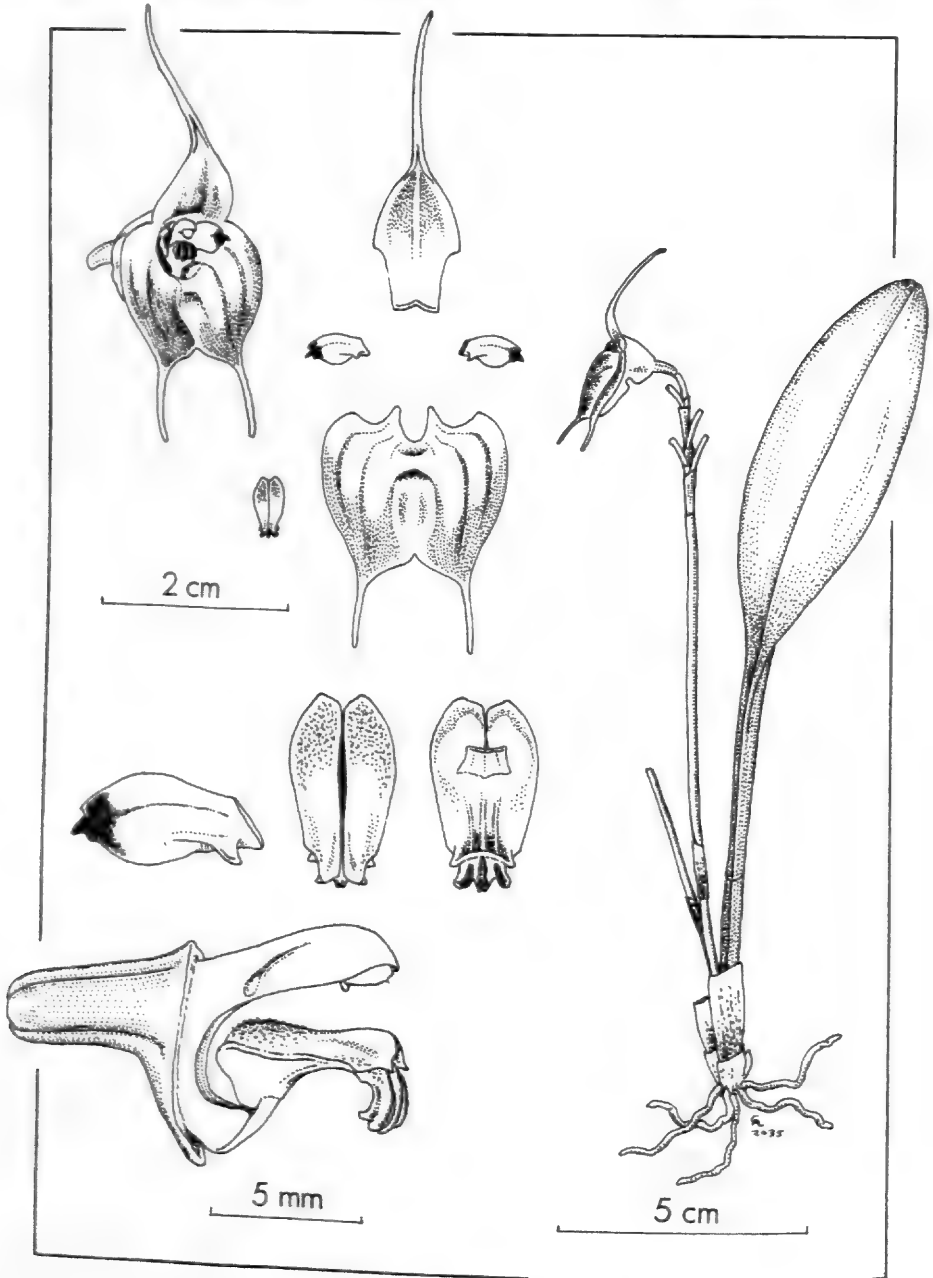


Plate 647. *Masdevallia teaguei*

MASDEVALLIA SUBGENUS VOLVULA

Masdevallia subgenus **Volvula** Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 77: 10, 2000.

Type: **Masdevallia caudivolvula** Kraenzl.

Ety.: From the Latin *volvulus*, "a twisted intestine," in allusion to the spiraled tails of the sepals.

The description of the single species will suffice for the subgenus. It is characterized by a single-flowered inflorescence and a lip divided by marginal folds. The thick sepals, that are carinate internally, with thick, twisted tails are unique.

Masdevallia caudivolvula Kraenzl., Notizbl. Bot. Gart. Berlin-Dahlem 8: 128, 1922.

Ety.: From the Latin *caudivolvulus*, "with a twisted tail," referring to the sepaline tails.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls blackish, erect, slender, 2-4.5 cm long, enclosed by 2-3 loose, thin, tubular sheaths. **Leaf** erect, coriaceous, 5-11 cm long including the 1-3 cm long petiole, 1-1.6 cm wide, the blade oblong, obtuse, cuneate below into the petiole. **Inflorescence** a solitary flower, borne by a slender, erect peduncle, 4-11 cm long, with a bract below the middle, from low on the ramicaul; floral bract tubular, 8-12 mm long; pedicel 6-8 mm long; ovary tri-lobed, 5 mm long; **sepals** yellow, suffused with brown, thick, rigid, concave with thickened veins within, the dorsal sepal obovate, 8 mm long, 5 mm wide, connate to the lateral sepals for 5 mm to form a short, broad, sepaline tube, the free portion rounded, contracted into a thick, twisted, yellow to orange tail 2-2.5 cm long, the lateral sepals minutely pubescent within, oblong, oblique, 8 mm long, 5 mm wide, connate 4 mm, the free portions obtuse, contracted into twisted tails similar to that of the dorsal sepal; **petals** white, oblong, 4 mm long, 1.75 mm wide, with the apex truncate, tridentate, callous along the labellar margin 5 mm ending in a rounded prominence above the base; **lip** white, dotted with purple, oblong-pandurate, 5 mm long, 2 mm wide, narrowed near the middle with marginal folds, with the apex rounded, denticulate, apiculate, the base truncate, hinged beneath; **column** green, suffused with purple, semiterete, 4 mm long, the foot equally long, with a short, incurved extension.

COLOMBIA: **Antioquia**: "Medellín," alt. 2300-2650 m, *Kalbreyer 1731* (Holotype presumably destroyed at B); near Medellín, May 1882, *G. Schmidtchen s.n.* (Lectotype here designated: W); El Retiro: between Santa Elena and La Palma above Medellín, alt. 2000-2400 m, *F.C. Lehmann 5145* (K); El Retiro, Hda. Normandía, alt. 2500 m, 2 Dec. 1956, *M. Ospina H. 75* (AMES); El Retiro, Alto de Las Palmas, alt. 2480 m, May 1977, *E. Acevedo s.n.* (JAUM); same collection, cultivated at Colomborquídeas 20 Apr. 1988, *C. Luer 13267* (MO); El Carmen, Perdidas de San Lorenzo, alt. 2500 m, 27 Nov. 1975, *R. Escobar et al. s.n.* (JAUM); Medellín, Cerro Padre Amaya, alt. 2350 m, 23 June 1975, *R. Escobar et al. s.n.* (JAUM); Sonsón, Tres Cruces, alt. 2750 m, 30 Apr. 1983, *C. Luer, J. Luer & R. Escobar 8891*; La Unión, San Bartolo, alt. 2400 m, 17 Dec. 1976, *L.C. Vieira et al. s.n.* (JAUM, SEL). **Caldas**: Alto de San Miguel, alt. 2450 m, 23 Nov. 1974, *R. Escobar et al. s.n.* (JAUM); between Anserma and Riosucio, alt. 2100 m, 1 Feb. 1979, *R. Escobar et al. 1922* (JAUM).



This species without close relatives is endemic in the Central Cordillera of Colombia where it was collected independently about the same time, probably in the early 1880's, by both Kalbreyer and Schmidtchen. Kalbreyer's collection was destroyed in Berlin, but Schmidtchen's collection exists in Reichenbach's herbarium in Vienna. For unknown reasons Reichenbach failed to publish the species. Perhaps he believed the twisted tails to be an artefact.

Vegetatively indistinguishable from the majority of the other species of the genus, this single-flowered species is unique with the thick, twisted, sepaline tails that look like three cork-screws. The fleshy blades are markedly thickened along the veins within. The petals are not remarkable with a low, marginal callus above the base. The lip is divided by marginal folds into an epichile and a hypochile.

Masdevallia caudivolvula does not thrive in cultivation, rarely lasting more than a few years.

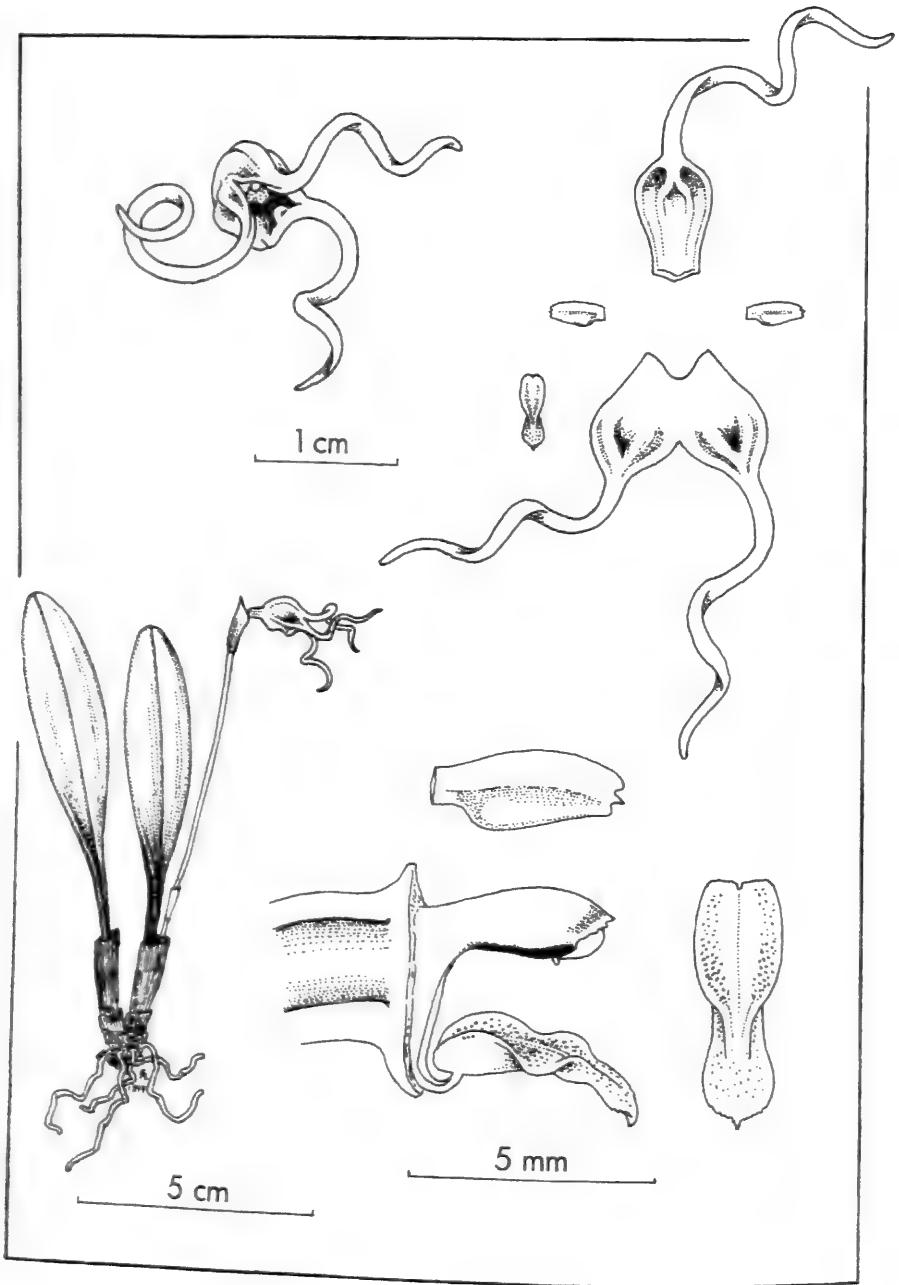


Plate 648. *Masdevallia caudivolvula*

EPILOGUE

In the Foreword to this Part Five of the *Systematics of Masdevallia*, I naïvely stated that the treatment of the genus is now complete, but modified by adding "as of today." It will never be complete. We often wonder what Lindley, Reichenbach, and Schlechter would have thought. New species are continually being discovered as the pristine forests of the Neotropics are invaded. As their habitats are destroyed, many other species still undescribed are being annihilated before ever reaching an authority. I might add that bureaucratic regulations now hamper the way from discovery to print.

When I drew my first *Masdevallia* in 1975, I did not envision the *Icones*. *Icones Pleurothallidinarum* began first in *Selbyana* with illustrations I now discard as crude. The present series began in 1986 as a publication of the Missouri Botanical Garden, with *Icones-2* being a broad over-view of the genus *Masdevallia*. As early as 1977, the idea of a publication with all species of *Masdevallia* was contemplated with Rodrigo Escobar. It seemed an impossible dream as we grappled in the dark. As the number of illustrations and familiarity with the genus grew, and techniques improved with the arrival of the personal computer, the ultimate goal no longer seemed unrealistic.

A coffee-table series called *Thesaurus Masdevalliarum* with reproductions of watercolors in natural size in full color was begun in Germany in 1984. It continues today with the 26th fascicle of *A Treasure of Masdevallia* by the Missouri Botanical Garden. The five volumes of *Icones Pleurothallidinarum* are a compilation of all the species already found in the coffee-table tomes, as well as all the species not yet included, for a grand total of about 500. Loose leaf editions of the *Icones* offer an excellent way to keep current with the addition of new species, as well as inevitable changes and corrections.

I wish you all well in your enjoyment of one of the most intriguing genera of orchids.



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As many times before, I thank Mrs. Amy McPherson, Kristin Pierce, and Phil and Ann Jesup for their meticulous reading of hundreds of pages of text.

I thank the following herbaria which were consulted: AAU, AMES, B, BAS, BM, BR, BREM, C, G, GB, HAL, HBG, JAUM, JE, K, L, LD, LE, LPB, LZ, M, MO, NY, P, QCA, QCNE, QPLS, S, SEL, US, VEN, and W. I owe especial gratitude to Phillip Cribb, Gustavo Romero, James Solomon, and Bruno Wallnöfer for many kindnesses extended to me on repeated visits to K (Kew), AMES, MO, and W (Vienna) respectively.

I owe immense gratitude for access to the living collections of J & L Orchids of Cordelia Head, Marguerite Webb, and Lucinda Winn, Easton, CT; Colomborquídeas of Juan Felipe and Ligia Posada, El Retiro, Colombia; Finca Dracula of Andres Maduro, Cerro Punta, Panama; Orchideeënkerkerij of Ton Sijm, Venhuizen, Holland; Royden Orchids of Roy and Denise Barrow, Great Missenden, UK; Orquídeas Peruanas of Manuel Arias, Lima, Peru; Orquídeas del Valle of Andrea Niessen and Juan Carlos Uribe, Cali, Colombia; Ecuagera of José Portilla and family, Gualaceo, Ecuador; Will Rhodehamel of Hoosier Orchids, Indianapolis, IN; and the British National Collection of Pleurothallids maintained by Stephen Manning, Tarporley, UK.

I am equally grateful for the generous help from many people, some far more than others, but listed in alphabetical order: Father Angel Andreetta of Paute, Ecuador; Dr. Moises Behar of Guatemala; Richard Burian of Portland, OR; Patrick and Martine Cloes, Hasselt, Belgium; Dennis D'Alessandro of Beaver, PA; Dr. Calaway Dodson of Sarasota, FL; Dr. Robert Dressler of Micanopy, FL; Doris Dukes and Bill Thoms of Brandon, FL; Peter and Gail Furniss of Newnan, GA; Luiz Diego Gómez of San José, Costa Rica; Johan and Clare Hermans of Enfield, UK; Juan del Hierro of Quito, Ecuador; Rudolf Jenny of Bern, Switzerland; Phil and Ann Jesup of Bristol, CT; Louis Jost of Baños, Ecuador; Helga and Willibald Königer of Munich, Germany; John Leathers of Berkeley, CA; Benigno Malo of Cuenca, Ecuador; Monica and Fernando Navarro of Quito Ecuador; Lynn O'Shaughnessy of Howell, MI; Pieter Oversteegen of Eindhoven, The Netherlands; Malli and Vera Lee Rao of Wilmington, DE; Tineke Roelfsema of Wageningen, The Netherlands; Dr. Isaias Rolando of Lima, Peru; George and Jeanne Schudel, Middleburg, FL; Jan Sönnemark of Halmstad, Sweden; Gerardus Staal of Palo Alto, CA; Walter Teague of San Francisco, CA; Ken Tokach of Portland, OR; Shigenobu Tsubota of Pereira, Colombia; and Berthold Würstle of Spielberg, Germany.

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GLOSSARY OF ABBREVIATIONS AND TERMS

- AAU, Herbarium Jutlandicum, Botanical Institute, University of Aarhus.
acuminate, the margins of the leaf or floral part concave toward the apex, tapering to a point.
acute, applied to the tip of the leaf or floral part, the sides meeting at an angle less than 90°.
alt., altitude, the number of meters above sea level.
Amer. Orchid Soc. Bull., Bulletin of the American Orchid Society.
AMES, the Orchid Herbarium of Oakes Ames, Cambridge, MA.
annulus, an obscure ring surrounding the ramicaul at the emergence of the inflorescence.
anther, the apical part of the column that produces the pollinia.
anther cap, the operculate covering of the pollinia.
apiculate, the apex with an apiculum, an abrupt point.
attenuate, long-acuminate.
B, Botanischer Garten und Botanisches Museum, Berlin-Dahlem.
AS, Herbarium, Botanisches Institut, Universität Basel.
basionym, a name in a different genus or other combination upon which a later name or combination is based.
BM, the British Museum of Natural History, London.
BR, Jardin botanique national de Belgique, Meise.
BREM, Herbarium, Botanische Abteilung, Übersee-Museum, Bremen.
bract, a sheathlike structure on the peduncle or rhizome.
C, Herbarium, Botanical Museum, University of Copenhagen.
caespitose, with abbreviated rhizomes, the ramicauls approximate or produced in clumps or tufts.
callus, a thickening, a protuberance, or one or more keels on the disc of the lip.
capitate, enlarged or globose at the apex.
capsule, a fruit that dries and opens at maturity, shedding numerous seeds.
carina, a low lamella or keel, an elongated thickening or callus.
carinate, with a carina or carinae.
cartilaginous, thickened, firm and tough, like cartilage.
caudate, as applied to the floral parts, the apex terminating in a tail.
caudicle, the narrowed tip of a pollinium.
cellular-glandular, with prominent glandular or capitate cells, with a cobble-stone appearance.
ciliate, with hairs (cilia) on the margin.
cleft, channeled or sulcate, with a longitudinal groove.
cleistogamous, a flower self-fertilized without opening.
COL, Herbario Nacional, Bogotá, Colombia.
column, the central structure of the flower composed of the united style and the filaments of the anther.
column-foot, the extension of the base of the column to which the lip is attached.
conduplicate, of the leaves, with a single, midline fold.
congested, the inflorescence densely flowered, the flowers closely spaced.
connate, inseparable, or united.
coriaceous, of leathery texture.
costate, with longitudinal, raised ridges; ribbed.
crested, with irregular, longitudinal lamellae.
dentate, denticulate, toothed.
dept., a department, a political division of a country.
disc, or **disk**, the upper surface of the central portion of the lip.
dorsal, on the upperside.
DNA, desoxy nucleic acid, analyses useful in recognizing relationships, but not practical for dictating taxonomy.
elliptical, shaped like an ellipse, widest at the middle.
entire, with smooth or unlobed margins.
epichile, the terminal portion of a divided lip.

epiphytic, growing upon another plant, but not parasitic.

filamentous, filiform, slender as a hair or thread.

floral bract, the bract subtending a pedicel.

G, Conservatoire et Jardin botaniques de la Ville Genève.

Gard. Chron., the Gardeners' Chronicle.

gen., genus, genera (pl.), the taxonomic category including species; the first part of a binomial name.

glabrous, smooth, without hairs.

HAL, Herbarium, Sektion Biowissenschaften, Martin-Luther-Universität, Halle.

HBG, Herbarium, Institut für Allgemeine Botanik, Hamburg.

herbarium, a collection of pressed, dried and mounted specimens of plants.

holotype, the specimen upon which the taxon is based.

hypochile, the basal portion of a divided lip.

inflorescence, the single flower, or a raceme of flowers.

isotype, any duplicate of the holotype, that is, any specimen that is part of the same collection as the holotype.

JAUM, the herbarium of "Joaquín Antonio Uribe," Medellín.

JE, Herbarium Haussknecht, Friedrich-Schiller-Universität, Jena.

K, the herbarium of the Royal Botanic Gardens at Kew.

Kraenzl., Fritz Kränzlin, German taxonomist.

L, Rijksherbarium, Leiden, The Netherlands.

LD, Herbarium, Botanical Museum, Lund, Sweden.

LE, Komarov Botanical Institute, St. Petersburg, Russia.

lamella, a tall carina or keel, a plate-like thickening or callus (a callus may include many lamellae).

lamellate, with a lamella or lamellae.

lamina, the blade of a leaf, sepal(s), or petals.

lax, loose, the inflorescence laxly or loosely flowered, the flowers distantly spaced.

lectotype, a specimen selected from among original specimens as the type when no holotype was cited.

Lehm., Friedrich Carl Lehmann, German engineer and consul in Popayán, Colombia.

lip, the labellum, the modified third petal.

LPB, Herbario Nacional de Bolivia, La Paz.

LZ, Wissenschaftsbereich Taxonomie/Ökologie und Botanischer Garten, Leipzig.

M, Herbarium, Botanische Staatssammlung, München.

m, meter, meters, the metric unit of length (100 centimeters) equal to 39.37 inches, or about 1.1 yards.

MO, the herbarium of the Missouri Botanical Garden, St. Louis.

neotype, a specimen selected as the type when all original specimens are missing.

nerve, vein, the longitudinal line or lines within the floral parts, representing vascular bundles.

NY, the herbarium of the New York Botanical Garden.

obovate, egg-shaped in outline, widest between the middle and the apex.

obtuse, applied to the tip of the leaf or floral part, the sides meeting at an angle more than 90°.

ovary, the part of the flower that develops into the fruit.

ovate, egg-shaped in outline, widest between the base and the middle.

P, Herbar, Laboratoire de Phanérogamie, Muséum National d'Histoire Naturelle, Paris.

pandurate, violin-shaped, narrowest near the middle.

papillose, covered with papillae or nipplelike humps.

paratype, a specimen cited in addition to a holotype.

pedicel, the stem of an individual flower.

peduncle, the stem that bears a solitary flower or a raceme.

petals, the two floral parts borne within the sepals.

petiole, the stemlike basal portion of the leaf.

plicate, with several, longitudinal veins or folds; pleated.

- pollinium, pollinia** (pl.), compact masses of pollen produced in the anther (two in *Masdevallia*).
- prov.**, a province, a political division of a country.
- pubescent**, more or less covered with hairs.
- pyriform**, pear-shaped.
- QCA**, Herbario, Departamento de Biología, Pontificia Universidad Católica, Quito.
- QCNE**, Herbario, Museo Nacional de Ciencias Naturales, Quito.
- QPLS**, Herbario P. Luis Sodiro, Biblioteca Ecuatoriana Aurelio Espinosa Pólit, Quito.
- raceme**, an unbranched inflorescence.
- rachis**, the axis or stem of the inflorescence beyond the peduncle.
- ramicaul**, the "secondary stem," the aerial, leaf-bearing stem, applied only to pleurothallids.
- Rchb. f.**, Heinrich Gustav Reichenbach, *filius*, German taxonomist, and son of.
- repent**, creeping, as applied to an elongated rhizome, as opposed to "caespitose."
- resupinate**, the flower bearing the lip lowermost.
- rhizome**, the horizontal stem made up from the bases of successive ramicauls.
- ribbed**, with longitudinal costae or ridges; costate.
- rostellum**, the minute flap between the anther and the stigma.
- S**, Herbarium, Botany Department, Swedish Museum of Natural History, Stockholm.
- saccate**, sacklike, or deeply concave.
- Schltr.**, Friedrich Richard Rudolf Schlechter, German taxonomist.
- sect., subject., section, subsection**, divisions of a genus.
- secund**, of a raceme, with the flowers pointing to one side.
- SEL**, the herbarium of the Marie Selby Botanical Garden, Sarasota.
- sepals**, the three most prominent, outer floral parts.
- sheaths**, the thin, leaflike structures enveloping the lower portions of the ramicauls.
- spatulate**, spoon-shaped, an ovate or obovate blade with a narrow stalk.
- species, species** (pl.), a population or a group of interbreeding or potentially interbreeding populations that share genetic features, and are separated by barriers from other populations; the basic unit in biological classification; the second part of a binomial name.
- stem**, a general term applied to the stem of a flower (pedicel), the stem of the inflorescence (peduncle), the stemlike base of the leaf (petiole), the "secondary stem" (ramicaul), or the rhizome.
- stigma**, the receptive part of the column on the undersurface.
- subacute**, acute, the angle of the apex only slightly less than 90°.
- subset., subsection**, a division of a section.
- successive**, of a raceme, the flowers maturing in succession, as opposed to simultaneously.
- sulcate**, channeled, with a longitudinal groove.
- synonym**, an alternate (usually superseded) name.
- syntype**, any one or more specimens cited by an author when no holotype was designated.
- tail**, a cauda, the elongated, narrow apex of a flower part.
- taxon, taxa** (pl.), a taxonomic group of any rank.
- taxonomy**, the science of identification and classification; systematics.
- terete**, cylindrical, round in cross section.
- truncate**, as though cut off transversely at the apex.
- type**, a holotype, isotype, lectotype, neotype, or syntype.
- US**, the United States National Herbarium, Smithsonian Institution, Washington, DC.
- VEN**, Herbario Nacional de Venezuela, Caracas.
- ventral**, on the underside.
- verrucose**, warty.
- W**, the herbarium of the Naturhistorisches Museum in Vienna (Wien).
- winged**, of the ovary, with tall, longitudinal keels.

CHECK LIST OF THE SPECIES, SUBSPECIES, VARIETIES AND
NATURAL HYBRIDS ATTRIBUTED TO THE GENUS MASDEVALLIA

- M. abbreviata** Rchb.f., Ecu., Peru
M. acaroi Luer & Hirtz, Ecu.
M. acrochordonia Rchb.f., Ecu.
M. adamsii Luer, Belize
M. adrianae Luer, Ecu.
M. aenigma Luer & Escobar, Col.
M. aequatorialis Lehm. & Kraenzl. = **M. pardina**
M. aequiloba Regel = **M. civilis**
M. affinis Lindl. = **M. laevis**
 subsp. **maculigera** (Schltr.) Luer = **M. laevis**
 subsp. **petiolaris** (Schltr.) Luer = **M. laevis**
M. agaster Luer, Ecu.
M. aguirrei Luer & Escobar, Col.
M. albella Luer & Teague, Ecu.
M. albicans Luer = **Dryadella albicans** (Luer) Luer
M. albida Lem. = **M. infracta**
M. alexandri Luer, Ecu.
M. alismifolia Kraenzl.
M. allenii L.O. Williams = **Trisetella triglochis**
 (Rchb.f.) Luer
M. Xalvaroi Luer & Escobar, Col.
M. amabilis Rchb.f. & Warsz., Peru
M. amaluzae Luer & Malo, Ecu.
M. amanda Rchb.f., Ven., Col., Ecu.
M. amethystina Rchb.f. = **Porroglossum amethystinum** (Rchb.f.) Garay
M. ametroglossa Luer & Hirtz, Ecu.
M. amoena Luer, Ecu.
M. amplexa Luer, Peru
M. ampullacea Luer & Andreetta, Ecu.
M. anachaeta Rchb.f., Col., Ecu., Peru, Bol.
M. anaristella Kraenzl. = **Barbosella anaristella**
 (Kraenzl.) Garay
M. anceps Luer & Hirtz, Ecu.
M. anchorifera Rchb.f. = **Scaphosepalum anchoriferum** (Rchb.f.) Pfitz.
M. andreettae Luer = **Dracula andreettae** (Luer) Luer
M. andreettana Luer, Ecu.
M. anemone Luer, Ecu.
M. anfracta Königler, Ecu.
M. angulata Rchb.f., Col., Ecu.
M. angulifera Rchb.f. ex Kraenzl., Col.
M. anisomorpha Garay, Col.
M. anomala Luer & Sijm, Peru
M. antioquiensis Lehm. & Kraenzl. = **M. molossus**
M. antonii Königler, Peru
M. anura Kraenzl. = **M. molossoides**
M. aops Luer & Malo = **M. klabochiorum**
M. aperta Kraenzl. = **Pleurothallis tripterantha** Rchb.f.
M. aphanes Königler, Ecu., Peru
M. apparitio Luer & Escobar, Col.
M. approviata Hort. ex Woolw. = **M. coccinea**
M. arangoi Luer & Escobar, Col.
M. argus Rchb. ex Kraenzl. = **Zootrophion argus**
 (Rchb.f. ex Kraenzl.) Luer
M. ariasii Luer, Peru
M. aristata Barb.Rodr. = **M. infracta**
M. armeniaca B.S. Williams = **M. coccinea**
M. arminii Linden & Rchb.f., Col.
M. aspera Rchb.f. ex Kraenzl. = **M. paivaiana**
M. asperrima Kraenzl. = **M. melanoxantha**
M. assurgens Luer & Escobar, Col.
M. asterotricha Königler, Peru
M. astuta Rchb.f. = **Dracula astuta** (Rchb.f.) Luer
M. atahualpa Luer, Peru
M. atropurpurea Rchb.f. (sphalm.) =
 M. auropurpurea
M. atrorubens Rchb.f. ex Woolw. **nomen nudum**
M. atrosanguinea B.S. Williams = **M. coccinea**
M. atroviolacea Kraenzl. = **M. mooreana**
M. attenuata Rchb.f., C.R., Pan.
M. auidax Königler, Peru
M. aurantiaca Lindl. = **M. infracta**
M. aurea Luer, Ecu.
M. aureodactyla Luer = **M. pachyura**
M. aureoluteum Godefroy = **M. ?**
M. aureorosea Weberbauer = **M. bicolor**
M. auriculigera Rchb.f. = **Dryadella auriculigera**
 (Rchb.f.) Luer
M. auropurpurea Rchb.f. = **M. bicolor**
M. aurorae Luer & M.W. Chase, Peru
M. aviceps Rchb.f. = **Dryadella aviceps**
 (Rchb.f.) Luer
M. ayahacana Luer, Peru
M. backhousiana = **Dracula chimaera**
 (Rchb.f.) Luer
M. bangii Schltr., Ecu., Peru, Bol.
M. barlaeana Rchb.f., Peru
M. barrowii Luer, Ecu.
M. bathyschista Schltr. = **M. fasciata?**
M. bella Rchb.f. = **Dracula bella** (Rchb.f.) Luer
M. bella Königler & D' Alessandro, Ecu.
M. benedictii Rchb.f. = **Dracula benedictii**
 (Rchb.f.) Luer
M. bennettii Luer, Peru
M. berthae Luer & Andreetta, Ecu.
M. bicolor Poepp. & Endl., Ven., Col., Ecu., Peru, Bol.
M. bicornis Luer, Ecu.
M. biflora E. Morr. = **M. bicolor**
M. biflora Regel, not Morr. = **M. caloptera**
M. bilabiata (Kraenzl.) Garay = **M. platyglossa**
M. blanda Königler = **M. crassicaulis**
M. boddaertii Linden ex André = **M. ignea**
M. bogotensis Hort. ex Gentil = **M. cortacea**
M. boliviensis Schltr., Bol.
 subsp. **leucophaea** (Luer & Vásquez) Luer =
 M. boliviensis
M. bomboiza Fiske = **Dracula lotax** (Luer) Luer
M. bonplandii Rchb.f., Col., Ecu., Peru
M. borucana P. H. Allen = **M. lata**
M. bottae Luer & Andreetta, Ecu.
M. bourdetteana Luer, Ecu.
M. brasili Mohr = **M. teaguei**
M. brachyantha Schltr., Bol.
M. brachyura Lehm. & Kraenzl., Ecu.
M. bradei Schltr. ex Hoehne = **Dryadella aviceps**
 (Rchb.f.) Luer
M. brenneri Luer, Ecu.
M. brevis Rchb.f. = **Scaphosepalum breve**
 (Rchb.f.) Rolfe

- M. brockmuelleri** Luer, Col.
M. bruchmuelleri E. Morr. = **M. coriacea**
M. bryophila Luer, Peru.
M. buccinator Rchb.f. & Warsz., Col.
M. bucculenta Luer & Hirtz, Ecu.
M. buchtienii Schltr. = **M. scandens**
M. bulbophyllopsis Kraenzl., Ecu.
M. burbridgeana Rolfe = **Dracula erythrochaete**
(Rchb.f.) Luer
M. burfordiensis O'Brien = **M. angulata**
M. burianii Luer & Dalström, Bol.
M. burzlaffiana Königer = **M. floribunda**
M. butcheri Luer = **Trisetella tenuissima** (C.
Schweinf.) Luer
M. cacodes Luer & Escobar, Col.
M. caesia Roetzl, Col.
M. calagrasalis Luer, Ecu.
M. callifera Schltr. = **Dracula houtteana** (Rchb.f.)
Luer
M. calocalix Luer, Ecu.
M. calocodon Luer & Vásquez = **M. yungasensis**
M. caloptera Rchb.f., Peru
M. calopterocarpa Rchb.f. = **M. amanda**
M. calosiphon Luer, Peru
M. calura Rchb.f., C.R.
M. calyptraia Kraenzl. = **M. corniculata**
M. campyloglossa Rchb.f. Col., Ecu., Peru
subsp. *ortgiesiana* (Rolfe) Luer = **M. campyloglossa**
M. candida Lindl. = **M. tovarensis**
M. candida Klotzsch & H.Karst ex Rchb.f. = **M.**
tovarensis
M. capillaris Luer = **M. plantaginea**
M. carderi Rchb.f. = **Dracula inaequalis** (Rchb.f.)
Luer
M. carderopsis Lehm. & Kraenzl. = **Dracula hout-**
teana (Rchb.f.) Luer
M. cardiantha Königer, Peru
M. carinata Cogn. = **Dryadella zebrina** (Porsch) Luer
M. carmenensis Luer & Malo, Ecu.
M. carolloi Luer & Andreetta = **M. sernae**
M. carpishica Luer & Cloes, Peru
M. carpophora Kraenzl. = **Pleurothallis tripterantha**
Rchb.f.
M. carruthersiana Lehm. & Kraenzl., Ecu.
M. casta Kraenzl. = **M. tubulosa**
M. castor Luer & Cloes, Peru
M. catepheres Königer, Peru
M. caudata Lindl., Ven., Col.
var. *shuttleworthii* (Rchb.f.) Rchb.f. = **M. caudata**
var. *gudotii* Rchb.f. = **M. caudata**
var. *xanthocorys* (Rchb.f.) Veitch = **M. caudata**
M. caudivolvula Kraenzl., Col.
M. cayennensis Rchb.f. = **M. cuprea**
M. cerastes Luer & Escobar, Col.
M. chaetostoma Luer, Ecu.
M. chaparensis Hashimoto, Bol.
M. chasei Luer, C.R.
M. chestertonii Rchb.f. = **Dracula chestertonii**
(Rchb.f.) Luer
M. chiguindensis Kraenzl. = **M. leucantha**
M. chimaera Rchb.f. = **Dracula chimaera**
(Rchb.f.) Luer
var. *robledorum* P. Ortiz = **Dracula robledorum**
(P. Ortiz) Luer & Escobar
M. chimboensis Kraenzl., Col.
- M. chloracra** Rchb.f. = **M. striatella**
M. chlorotica Kraenzl. = **M. laevis**
M. chontalensis Rchb.f., C.R., Pan.
M. chrysochaete Lehm. & Kraenzl. = **M. strumifera**
M. chrysonera Lehm. & Kraenzl. = **M. uncifera**
M. chuspipatae Luer & Teague, Bol.
M. cinnabarina Lindl. ex sic. = **M. coccinea**
M. cinnamomea Rchb.f., Peru
M. citrinella Luer & Malo, Ecu.
M. civiis Rchb.f. & Warsz., Peru
M. clandestina Luer & Escobar, Col.
M. cleistogama Luer, Peru
M. cloesii Luer, Peru
M. cocapatae Luer, Teague & Vásquez, Bol.
M. coccinea Linden ex Lindl., Col.
multiple varieties
M. coerulescens B.S. Williams = **M. coccinea**
M. colibri Burbidge = **M. trochilus**
M. collantesii D.E. Benn. & Christenson, Peru
M. collina L.O. Williams, Pan.
M. colombiana (Schltr.) P.H. Allen = **Porroglossum**
mordax (Rchb.f.) Sweet
M. colossus Luer, Ecu., Peru
M. concinna Königer, Peru
M. condorensis Luer & Hirtz, Ecu.
M. confusa Kraenzl. = **M. laevis**
M. constricta Poepp. & Endl., Ecu., Peru
M. copiosa Kraenzl. = **M. hians**
M. corazonica Schltr., Ecu.
M. cordeliana Luer, Peru
M. corderoana Lehm. & Kraenzl., Ecu.
M. coriacea Lindl., Col., Ecu., Peru
subsp. *bonplandii* (Rchb.f.) Luer = **M. bonplandii**
M. corniculata Rchb.f., Col., Ecu.
var. *inflata* (Rchb.f.) Veitch = **M. corniculata**
M. cosmia Königer & Sijm, Peru
M. costaricensis Rolfe = **M. marginella**
M. cranion Luer, Peru
M. crassicaudis Luer & J.Portilla, Ecu
M. crassicaulis Luer & J.Portilla, sphalgm. =
M. crassicaudis
M. crenulata Pabst = **Dryadella crenulata**
(Pabst) Luer
M. crescenticola Lehm. & Kraenzl., Col., Ecu.
M. cretata Luer, Ecu.
M. cryptocopis Rchb.f. ex Kraenzl. = **M. picturata**
M. cucullata Lindl., Col., Ecu.
M. cucutillensis Kraenzl. = **M. caudata**
M. culex hort. = **Pleurothallis macroblepharis** Rchb.f.
M. cuprea Lindl., Guay, Suriname, Fr. Guay., Ven.
subsp. *hepatica* (Luer) Luer
M. cupularis Rchb.f., C.R.
M. curtipes Barb. Rodr., Brazil
M. cyathogastra Schltr. = **M. nidifica**
M. cyclotega Königer, Peru
M. cylinx Luer & Malo, Ecu.
M. dalessandroi Luer, Ecu.
M. dalstroemii Luer, Ecu.
M. datura Luer & Vásquez, Bol.
M. davisii Rchb.f., Peru
M. dayana Rchb.f. = **Zootrophion dayanus**
(Rchb.f.) Luer
M. deceptrix Luer & Würstle, Ven.
M. decora B.S. Williams = **M. coccinea**
M. decumana Königer, Ecu., Peru

- M. deformis** Kraenzl., Ecu.
 subsp. *exaltata* Luer = **M. deformis**
M. delhierroi Luer & Hirtz, Col.
M. delphina Luer, Ecu.
M. deltoidea Luer = **Dracula deltoidea** (Luer) Luer
M. demissa Rchb.f., C.R.
M. deniseana Luer & J.Portilla, Ecu.
M. denisonii Dombrain = **M. coccinea**
M. densiflora Schltr.
M. deorsum Rolfe = **M. caesia**
M. dermatantha Kraenzl. = **M. campyloglossa**
M. descendens Luer & Andreetta, Ecu.
M. diantha Schltr. = **M. chontalensis**
M. didyma Luer = **Trisetella didyma** (Luer) Luer
M. dimorphotricha Luer & Hirtz, Ecu.
M. discoidea Luer & Würstle, Brazil
M. discolor Luer & Escobar, Col.
M. dispar Luer = **M. sanctae-fidei**
M. diversifolia Kraenzl. = **M. parvula**
M. dodsonii Luer = **Dracula dodsonii** (Luer) Luer
M. dolichopoda Luer = **Dryadella dolichopoda**
 (Luer) Luer
M. don-quijote Luer & Andreetta, Ecu.
M. dorisiae Luer, Ecu.
M. draconis Luer & Andreetta, Ecu.
M. dreisei Luer, Ecu.
M. dressleri Luer = **Trisetella dressleri** (Luer) Luer
M. dryada Luer & Escobar, Col.
M. dudleyi Luer, Peru
M. dunstervillei Luer, Ven.
M. dura Luer, Ecu.
M. dynastes Luer, Ecu.
M. eburnea Luer & Maduro, Pan.
M. ecuadata Schltr. = **M. tubuliflora**
M. echidna Rchb.f. = **Porroglossum echidna**
 (Rchb.f.) Garay
M. echinata Luer & Andreetta = **M. rosea** subsp.
echinata
M. echinocarpa Schltr. = **M. erinacea**
M. echo Luer, Peru
M. ecliptrata Kraenzl. (sphalm.) = **M. calyprata**
M. eduardii Rchb.f. = **Porroglossum eduardii**
 (Rchb.f.) Sweet
M. edwallii Cogn. = **Dryadella edwallii** (Cogn.) Luer
M. ejiriana Luer & J.Portilla, Ecu.
M. elachys Luer, Bol.
M. elata Luer = **Dryadella elata** (Luer) Luer
M. elegans Luer & Escobar, Peru
M. elephanticeps Rchb.f. & Warsz., Col.
 var. *pachysepala* Rchb.f. = **M. pachysepala**
M. ellipes Rchb.f. = **M. peristeria**
M. empusa Luer, Ecu., Peru
M. enallax as **epallax** Königler, ?hybr.
M. encephala Luer & Escobar, Col.
M. endotrachys Kraenzl. = **M. coriacea** subsp.
bonplandii
M. ensata Rchb.f., Ven.
M. ephelota Luer & Cloes, Peru
M. ephippium Rchb.f. = **M. trochilus**
 var. *acrochordonia* = **M. acrochordonia**
M. erinacea Rchb.f., C.R., Pan., Col., Ecu.
M. erythrochaete Rchb.f. = **Dracula erythrochaete**
 (Rchb.f.) Luer
M. espirito-sanctensis Pabst = **Dryadella espirito-**
sanctensis (Pabst) Luer
M. estradae Rchb.f., Col.
 var. *delicata* = **M. estradae**
 var. *ludibunda* = **M. ludibunda**
 var. *xanthina* = **M. xanthina**
M. eucharis Luer, Ecu.
M. eumeces Luer, Peru
M. eumeliae Luer, Peru
M. eurynogaster Luer & Andreetta, Ecu.
M. exaltata Luer = **M. deformis**
M. excelsior Luer & Andreetta, Ecu.
M. exigua Ames & C.Schweinf. = **M. pygmaea**
M. exilipes Schltr. = **M. klabochiorum?**
M. expansa Rchb.f., Col.
M. expers Luer & Andreetta, Ecu.
M. exquisita Luer & Hirtz, Bol.
M. falcago Rchb.f., Col.
M. fasciata Rchb.f., Col.
M. felix Luer = **Dracula felix** (Luer) Luer
M. fenestrata Lindl. = **Zootrophion fenestrata**
 (Lindl.) Luer
M. fertilis Kraenzl. = **M. campyloglossa**
M. figuerone Luer, Ecu., Peru
M. filamentosa Kraenzl. = **M. pumila**
M. filaria Luer & Escobar, Col., Ecu.
M. fimbriata Ames & C.Schweinf. = **Pleurothallis**
setosa C.Schweinf.
M. fissa Kraenzl. = **M. heteroptera**
M. fiaccida Kraenzl. = **M. unclifera**
M. flammula H.Mohr & Braas = **M. amabilis**
M. flava (hort. ex Stein) Luer, Ven.
M. flaveola Rchb.f., C.R., Pan.
M. floribunda Lindl. Mex., Guat., Hond., El Sal., Nic., C.R.
 subsp. *tuerckheimii* (Ames) Luer = **M. floribunda**
M. foeda Luer & Vásquez = **M. menatoi**
M. foetens Luer & Escobar, Col.
M. fonsecae Königler = **M. attenuata**
M. forgetiana Kraenzl. = **M. infracta**
M. formosa Luer & Cloes, Peru
M. fosterae Luer, unk.
M. fractiflexa Lehm. & Kraenzl., Ecu.
M. fragrans Woolw., Col.
M. frilehmannii Luer & Vásquez, Bol.
M. frontinoënsis Kraenzl. = **M. herradurae**
M. fuchsii Luer, Peru
M. fuliginosa Luer = **Dracula radiella** (Luer)
 Luer
M. fulvescens Rolfe, C.R.
M. finebris Endres ex Kraenzl. = **M. reichen-**
bachiiana
 ?*M. galeata* Linden = **M.**
M. galeottiana A. Rich. & Gal. = **M. floribunda**
M. garciae Luer, Ven.
M. gargantua Rchb.f., Col.
M. gaskelliana Rchb.f. = **Dracula erythrochaete**
 (Rchb.f.) Luer
M. geminiflora P. Ortiz, Col., Ecu.
M. gemmata Rchb.f. = **Trisetella gemmata**
 (Rchb.f.) Luer
M. gerlachii Königler = **M. macroglossa**
M. gibberosa Rchb.f. = **Scaphosepalum gibberosum**
 (Rchb.f.) Rolfe
M. gigas Luer & Andreetta = **Dracula gigas**
 (Luer & Andreetta) Luer
M. gilbertoi Luer & Escobar, Col.

- M. glandulosa** Königer, Ecu., Peru
M. glomerosa Luer & Andreetta, Ecu.
M. gloriae Luer & Maduro, Pan.
M. glossacles Luer = **M. mentosa**
M. gnoma Sweet, Ecu.
M. gomes-ferreirae Pabst = **Dryadella gomes-ferreirae** (Pabst) Luer
M. goliath Luer & Andreetta, Ecu., Peru
M. gomeziana Lehm. & Kraenzl. = **M. laevis**
M. gorgo Rchb.f. = **Dracula astuta** (Rchb.f.) Luer
M. gracilentia Rchb.f. = **Zootrophion gracilentus** (Rchb.f.) Luer
M. gracilior Königer & J.Portilla = **M. lenae**
M. graminea Luer, Ecu.
M. grandiflora C. Schweinf. = **M. pumila**
M. grossa Luer = **M. ophioglossa** subsp. **grossa**
M. guatemalensis Schltr. = **Dryadella guatemalensis** (Schltr.) Luer
M. guayanensis Lindl. ex Benth., Ven., Guayana
M. guerrieroi Luer & Andreetta, Ecu.
M. gustavii Rchb.f. = **M. amanda**
M. gutierrezii Luer, Bol.
M. guttulata Rchb.f., Ecu.
M. guttulata Rolfe = **M. guttulata**
M. haematocantha Lindl. *sensu* Woolw. *nomen nudum*
M. haematosticta Rchb.f. = **M. peristeria**
M. hajekii Luer = **M. chaparensis**
M. harlequina Luer, Peru
M. harryana Rchb.f. = **M. coccinea**
M. hartmannii Luer, Ecu.
M. heideri Königer, Bol.
M. helenae Luer, Bol.
M. helgae Königer & J.Portilla
M. henniae Luer & Dalström, Ecu.
M. hepatica Luer = **M. cuprea**
M. hercules Luer & Andreetta, Col., Ecu.
M. herradurae Lehm. & Kraenzl., Col.
M. herzogii Schltr. = **M. bicolor**
M. heteromorpha Rchb.f. *nomen nudum* = **M. heteroptera**
M. heteroptera Rchb.f., Col.
M. heterotepala Rchb.f. = **M. campyloglossa**
M. hians Linden & Rchb.f., Col.
M. hieroglyphica Rchb.f., Col.
M. hirtzii Luer & Andreetta, Ecu.
M. hocijeri Luer & Hirtz, Col., Ecu.
M. hoppii Schltr. = **M. pachyantha**
M. hornii Königer = **Pleurothallis yupanki** Luer & Vásquez
M. horrida Teuscher & Garay = **M. erinacea**
M. hortensis Luer & Escobar, Col.
M. houtteana Rchb.f. = **Dracula houtteana** (Rchb.f.) Luer
M. hubeinii Luer & Würstle, Col.
M. hubschii Rchb.f., sphalm. = **Maxillaria hubschii**
M. huebneri Schltr. = **Trisetella triglochis** (Rchb.f.) Luer
M. huebschiana Kraenzl. = **M. polysticta**
M. humilis Luer = **M. zahlbruckneri**
M. hydrae Luer, Ecu.
M. hylodes Luer & Escobar, Col.
M. hymenantha Rchb.f., Peru
M. hypodiscus Rchb.f. = **Zootrophion hypodiscus** (Rchb.f.) Luer
M. hystrix Luer & Hirtz, Ecu.
M. icterina Königer, Peru
M. idae Luer & Arias, Peru
M. ignea Rchb.f., Col.
 multiple varieties
M. immensa Luer, Peru
M. impostor Luer & Escobar, Col., Ecu., Ven.
M. inaequalis Rchb.f. = **Dracula inaequalis** (Rchb.f.) Luer
M. indecora Luer & Escobar, Col.
M. inflata Rchb.f. = **M. corniculata**
M. infracta Lindl. subsp. **infracta**
M. infracta subsp. **curtipes** (Barb.Rodr.) Luer = **M. curtipes**
 subsp. **obscurans** Luer = **M. obscurans**
 subsp. **oscitans** Luer = **M. oscitans**
 var. **aristata** Barb.Rodr. = **M. infracta**
 var. **purpurea** Rchb.f. = **M. infracta**
M. ingridiana Luer & J.Portilla, Ecu.
M. instar Luer & Andreetta, Ecu., Peru
M. invenusta Luer = **M. bulbophyllopsis**
M. ionocharis Rchb.f., Peru
M. irapana Sweet, Ven.
M. iricolor Rchb.f. as **tricolor** (sphalm.) = **Dracula iricolor** (Rchb.f.) Luer
M. iricolor Rchb.f. ex Kraenzl. = **Dracula iricolor** (Rchb.f.) Luer
M. iris Luer & Escobar, Ven.
M. ishikoi Luer, Bol.
M. isos Luer, Bol.
M. jalapensis Kraenzl. = **Pleurothallis jalapensis** (Kraenzl.) Garay
M. janetiae Luer = **Dracula janetiae** (Luer) Luer
M. jarae Luer, Peru
M. jimenezii Königer = **M. empusa** Luer
M. johannis Schltr. = **Dracula pusilla** (Rolfe) Luer
M. josei Luer, Ecu.
M. juan-albertoi Luer & Arias, Peru
M. jubar Luer & Malo = **M. tridens**
M. kalbreyeri Rchb.f. ex Kraenzl. = **M. urceolaris**
M. karineae Nauray ex Luer, Peru
M. kautskyi Pabst = **Dryadella auriculigera** (Rchb.f.) Luer
M. klabochorium Rchb.f., Col., Ecu., Peru
M. kuhniorum Luer, Peru
M. kyphonantha Sweet, Ven.
M. lactea Kraenzl. = **Dracula velutina** (Rchb.f.) Luer
M. laeta Rchb.f. = **M. coccinea**
M. laevis Lindl., Col., Ecu.
M. lamia Luer & Hirtz, Ecu.
M. lamprotyria Königer, Peru
M. lankesteriana Luer, C.R.
M. lansbergii Rchb.f., Ven.
M. lappifera Luer & Hirtz, Ecu.
M. lata Rchb.f., C.R., Pan.
M. lateritia hort. *nomen nudum* = **M. coccinea**
M. laucheana Kraenzl., C.R.
M. lawrencei Kraenzl. = **M. guttulata**
M. lehmannii Rchb.f., Ecu.
M. lenae Luer & Hirtz, Ecu.
M. leonardoii Luer, Ecu.
M. leonii D.E.Benn. & Christenson, Peru
M. leontoglossa Rchb.f., Col.
M. lepida Rchb.f. = **M. laevis**
M. leptoura Luer, Col., Ecu., Peru

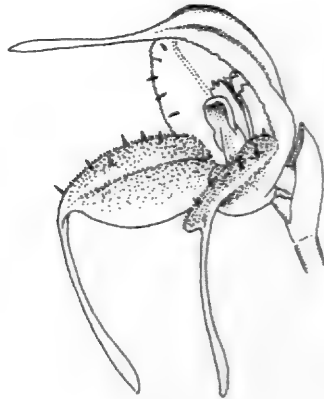
- M. leucantha* Lehm. & Kraenzl., Ecu.
M. leucophaea Luer & Vásquez = *M. boliviensis*
M. lewisii Luer & Vásquez, Bol.
M. Xligiae Luer & Escobar, Col.
M. lilacina Königer, Peru
M. liliana Luer, Peru
M. lilliputiana Cogn. = *Dryadella lilliputiana* (Cogn.) Luer
M. lima Lehm. & Kraenzl. = *Scaphosepalum lima* (Lehm. & Kraenzl.) Schltr.
M. limax Luer subsp. *limax*, Ecu. subsp. *maxilimax* (Luer) Luer = *M. maxilimax*
M. lindeniana A. Rich. & Gal. = *M. floribunda*
M. lindenii André = *M. coccinea*
M. linearifolia Ames = *Dryadella linearifolia* (Ames) Luer
M. lineolata Königer, Peru
M. lintrricula Königer, Ecu., Peru
M. livingstoneana Rchb.f., Pan., C.R., Col.
M. longicaudata Lem. = *M. infracta*
M. longiflora Cogn. = *M. coccinea*
M. longiflora Kraenzl. = *Barbosella cucullata* (Lindl.) Schltr.
M. lotax Luer = *Dracula lotax* (Luer) Luer
M. lowii Rolfe = *Dracula platycrater* (Rchb.f.) Luer
M. lucernula Königer, Peru
M. lucernula Königer, Peru
M. loui Luer & Hirtz, ECU
M. ludibundella Luer & Escobar, Col.
M. Luerti Senghas = *M. Xsenghasiana* Luer
M. luziae-mariae Luer & Vásquez, Bol.
M. lychniphora Königer, Peru
M. macrochila Regel = *Dracula chestertonii* (Rchb.f.) Luer
M. macrodactyla Rchb.f. = *Scaphosepalum macrodactylum* (Rchb.f.) Rolfe
M. macrogenia (Arango) Luer & Escobar, Col.
M. macroglossa Rchb.f., Col., Ven.
M. macropus Lehm. & Kraenzl., Ecu.
M. macrura Rchb.f., Col.
M. maculata Klotzsch. & H.Karst., Ven.
M. maculigera Schltr. = *M. laevis*
M. maduroi Luer, Pan.
M. mallii Luer, Ecu.
M. maloi Luer, Ecu.
M. manarana Carnevali & Ramirez = *M. guayanensis*
M. manchinazae Luer & Andreetta, Ecu.
M. mandarina (Luer & Escobar) Luer, Col., Ecu.
M. manoloi Luer & Arias, Peru
M. manta Königer, Ecu.
M. margaretae Luer = *M. carruthersiana*
M. marginella Rchb.f., C.R.
M. marizae Luer & Rolando, Peru
M. marthae Luer & Escobar, Col.
M. martineae Luer, Bol.
M. martiniana Luer, Ecu.
M. mascarata Luer & Vásquez, Bol.
M. mastodon Rchb.f., Col.
M. mataxa Königer & H.Mend., Ecu.
M. maxilimax (Luer) Luer, Ecu.
M. maxillariiformis Lehm. & Kraenzl. = *M. strumifera*
M. mayayu Luer & Hirtz, Ecu.
M. medellinensis Kraenzl. = *Dracula radiosa* (Rchb.f.) Luer
M. medinae Luer & J.Portilla, Ecu.
M. medusa Luer & Escobar, Col.
M. megaloglossa Luer & Escobar = *M. vargasii*
M. meiracyllium Rchb.f. = *Dryadella meiracyllium* (Rchb.f.) Luer
M. mejiana Garay, Col.
M. melanoglossa Luer, Ecu.
M. melanopoda Linden *nomen nudum* = *M. melanopus*
M. melanopus Rchb.f., Peru
M. melanoxantha Linden & Rchb.f., Col., Ven.
M. meleagris Lindl., Col.
M. meleagris Lindl. sensu Rchb.f. = *M. picturata*
M. melina Königer & Meza = *M. liliana*
M. melloi Pabst = *Dryadella melloi* (Pabst) Luer
M. menatoi Luer & Vásquez, Bol.
M. mendozae Luer, Ecu.
M. mentosa Luer, Ecu.
M. merinói Luer & J.Portilla, Ecu.
M. metallica Lehm. & Kraenzl. = *M. caesia*
M. mezae Luer, Peru
M. microglochis Rchb.f. = *Dracula velutina* (Rchb.f.) Luer
M. microptera Luer & Witrstle, Peru
M. microsiphon Luer, Ecu.
M. midas Luer, Ecu.
M. mijahuangae Bennett = *M. cyclotega*
M. milagroí Luer & Hirtz, Ecu.
M. militaris Rchb.f. & Warsz. = *M. coccinea*
M. miniata B.S.Williams = *M. coccinea*
M. minuta Lindl., Guayana, Fr. Guayana, Suriname, Ven., Col., Ecu., Peru, Bol., Brazil
M. misasii Braas, Col.
M. molossoides Kraenzl., C.R., Nic, Pan.
M. molossus Rchb.f., Col.
M. Xmonicana Luer
M. monogona Königer, Peru
M. mooreana Rchb.f., Col.
M. mopsus Lehm. & Kraenzl. = *Dracula mopsus* (Lehm. & Kraenzl.) Luer
M. mordax Rchb.f. = *Porroglossum mordax* (Rchb.f.) Sweet
M. morenoi Luer, Bol. = *M. schizopetala*
M. morochoi Luer & Andreetta, Ecu.
M. mosquerae Lehm. & Kraenzl. = *Dracula houtteana* (Rchb.f.) Luer
M. moyobambae Königer = *M. weberbaueri*
M. murex Luer, Ecu.
M. muriculata Kraenzl. = *M. pygmaea*
M. musaica E. Morr. = *M. coccinea*
M. muscosa Rchb.f. = *Porroglossum muscosum* (Rchb.f.) Schltr.
M. mutica Luer & Escobar, Col.
M. myriostigma E. Morr. = *M. floribunda*
M. Xmystica Luer, Col.
M. naranjapatne Luer, Ecu.
M. navicularis Garay & Dunsterville, Ven.
M. navicularis Kraenzl. *nomen nudum* = *Scaphosepalum anchoriferum* (Rchb.f.) Rolfe
M. nebulina Luer, Bol.
M. neglecta Königer = *M. rufescens*
M. newmaniana Luer & Teague, Ecu.
M. nicaraguae Luer, Nic.
M. nidifica Rchb.f., C.R., Pan., Col., Ecu.

- M. niesseniae** Luer, Col.
M. nikoleana Luer & J. Portilla, Ecu., Peru
M. nitens Luer, Bol.
M. nivea (Luer & R. Escobar) Luer & R. Escobar, Col.
M. nivalis Rchb.f. ex Kraenzl. *nomen nudum*
 = **M. hians**
M. norae Luer, Ven., Col., Brazil
M. normanii hort. = **M. reichenbachiana**
M. norops Luer & Andreetta, Ecu.
M. notosibirica Maekawa & Hashimoto, Bol.
M. nutans Lehm. & Kraenzl. = **M. anachaeta**
M. nycterina Rchb.f. = **Dracula nycterina**
 (Rchb.f.) Luer
M. obrieniana Rolfe = **Dryadella aviceps**
 (Rchb.f.) Luer
M. obscurans Luer, Brazil
M. ocanensis Kraenzl. = **M. picturata**
M. ochracea Burbidge *nomen nudum* = **M. coriacea**
M. ochtodes Rchb.f. = **Scaphosepalum verrucosum**
 (Rchb.f.) Pfitz.
M. odontocera Luer & Escobar, Col.
M. odontochila Schltr. = **M. cupularis**
M. odontopetala Luer, Ecu.
M. oligantha Schltr. = **M. amanda**
M. olivacea Kraenzl. = **M. angulifera**
M. olmosii Königer = **M. zahlbruckneri**
M. omorenoi Luer & Vásquez, Bol.
M. ophioglossa Rchb.f.
 subsp. *grossa* (Luer) Luer = **M. ophioglossa**
M. oreas Luer & Vásquez, Bol.
M. ortalis Luer, Peru
M. ortgiesiana hort. ex Rolfe = **M. campyloglossa**
M. oscarii Luer & Escobar, Col.
M. oscitans Luer, Brazil
M. os-draconis Luer & Escobar, Col.
M. os-viperae Luer & Andreetta, Ecu., Peru
M. osmariniana Braga = **Dryadella osmariniana**
 (Braga) Luer
M. ova-avis Luer, Ecu.
M. pachyantha Rchb.f., Col.
 var. *hoppii* (Schltr.) Kraenzl. = **M. pachyantha**
M. pachygyne Kraenzl. *obscure species*
M. pachysepala (Rchb.f.) Luer
M. pachyura Rchb.f., Ecu.
 subsp. *leptoura* (Luer) Luer = **M. leptoura**
M. paisbambae Lehm. & Kraenzl. = **M. xanthina**
M. paivaëana Rchb.f., Bol.
M. pallida (Woolw.) Luer = **M. xanthina**
M. palmensis Kraenzl. = **M. fasciata**
M. panamensis (Schltr.) Ames = **M. livingstoneana**
M. pandurilabia C. Schweinf., Peru
M. panguiënsis Luer & Andreetta, Ecu.
M. pantex Luer = **Trisetella pantex** (Luer) Luer
M. pantherina Lehm. & Kraenzl. = **M. laevis**
M. pantomima Luer & Hirtz, Ecu.
M. papillosa Luer, Ecu.
M. paquishae Luer & Hirtz, Ecu., Peru
M. paranaënsis Schltr. = **Dryadella paranaënsis**
 (Schltr.) Luer
M. pardina Rchb.f., Col., Ecu.
M. xparlatoreana Rchb.f. = **M. xsplendida**
M. parvula Schltr., Col., Ecu., Peru, Bol.
M. pastensis Kraenzl. = **M. unclifera**
M. pastinata Luer, Col.
- M. patchicutzae** Luer & Hirtz, Ecu.
M. patriciana Luer, Ecu.
M. patula Luer & Malo, Ecu.
M. paulensis Barb. Rodr. = **Dryadella aviceps**
 (Rchb.f.) Luer
M. pelecanceps Luer = **Luerella pelecanceps**
M. peristeria Rchb.f.
 subsp. *haematosticta* (Rchb.f.) Luer = **peristeria**
M. pernix Königer, Peru
M. perpusilla Kraenzl. = **Dryadella perpusilla**
 (Kraenzl.) Luer
M. persicina Luer, Ecu.
M. peruviana Rolfe = **M. bicolor**
M. pescadoënsis Luer & Escobar, Col.
M. petiolaris Schltr. = **M. laevis**
M. phacopsis Luer & Dalström, Bol.
M. phasmatodes Königer, Peru
M. phlogina Luer, Peru
M. phoenix Luer, Peru
M. picea Luer, Peru
M. picta Luer, Ecu., Peru
M. picturata Rchb.f., C.R., Pan., Col., Ven., Ecu.,
 Peru, Bol.
 var. *minor* Cogn. = **M. picturata**
 subsp. *minor* (Cogn.) Luer = **M. picturata**
M. pileata Luer & Würstle, Col.
M. pinocchio Luer & Andreetta, Ecu.
M. planadensis Luer & Escobar, Col.
M. plantaginea (Poepp. & Endl.) Cogn., Peru, Ecu.
M. platycraeter Rchb.f. = **Dracula platycraeter**
 (Rchb.f.) Luer
M. platyglossa Rchb.f., Col., Ecu.
M. platyrhachis Rolfe = **Pleurothallis endotrachys**
 Rchb.f.
M. pleurothalloides Luer, Pan.
M. plynophora Luer, Peru
M. xpoluta Luer & Sijm
M. pollux Luer & Cloes, Peru, Ecu.
M. polyantha Lindl. = **M. schlimii**
M. polychroma Luer, Ecu.
M. polyphemus Luer = **Dracula polyphemus** (Luer)
 Luer
M. polysticta Rchb.f., Ecu, Peru
 var. *crassicaudata* Rchb.f. = **M. pachyura**
 subsp. *spathulifolia* (Kraenzl.) Luer = **M. polysticta**
M. popayanensis Lehm. & Kraenzl. = **Dryadella simula**
 (Rchb.f.) Luer
M. popowiana Königer & J.G. Weinm., Peru
M. porcelliceps Rchb.f. = **M. macroglossa**
 var. *sulphurea* = **M. bonplandii**
M. porphyrea Luer, Ecu.
M. portillae Luer & Andreetta, Ecu.
M. posadae Luer & Escobar, Col., Peru
M. pozoi Königer, Ecu, Peru
M. princeps Luer, Peru
M. prodigiosa Königer, Peru
M. proliza Luer, Peru
M. prosartema Königer, Peru
M. pseudominuta Sweet = **M. kyphonantha**
M. psittacina Rchb.f. = **Dracula psittacina** (Rchb.f.)
 Luer & Escobar
M. psyche Luer = **Dracula psyche** (Luer) Luer
M. pteroglossa Schltr., Col.
M. pterygiophora Luer & Escobar, Col.

- M. pulcherrima** Luer & Andreetta, Ecu.
M. pulex hort. ex Rchb.f. (sphalm.) = **Pleurothallis macroblepharis** Rchb.f.
M. pulvinaris Rchb.f. = **Scaphosepalum pulvinare** (Rchb.f.) Rolfe
M. pumila Poepp. & Endl., Col., Ecu., Peru, Bol.
M. punctata Rolfe = **Scaphosepalum anchoriferum** (Rchb.f.) Rolfe
M. purpurella Luer & Escobar subsp. **purpurella**, Col.
 subsp. **nivea** Luer & Escobar = **M. purpurella**
M. purpurina Schltr. = **M. amabilis**
M. pusilla Rolfe = **Dracula pusilla** (Rolfe) Luer
M. pusiola Rchb.f. = **Dryadella pusiola** (Rchb.f.) Luer
M. pygmaea Kraenzl., C.R., Col., Ecu.
M. pyknosepala Luer & Cloes, Peru
M. pyxis Luer, Peru
M. quasimodo Luer & Teague, Bol.
M. quilichaoënsis Lehm. & Kraenzl. = **Dracula iricolor** (Rchb.f.) Luer
M. racemosa Lindl., Col.
M. radiosa Rchb.f. = **Dracula radiosa** (Rchb.f.) Luer
M. rafaëliana Luer, C.R., Pan.
M. rana-aurea Luer, Peru
M. rauhii Senghas & Braas = **M. mezae**
M. receptrix Luer & Vásquez, Bol.
M. rechingeri Kraenzl.
M. recurvata Luer & Dalström, Peru
M. reflexa Misas = **M. misasii**
M. reflexa Schltr. = **M. cupularis**
M. regina Luer, Peru
M. reichenbachiana Endres ex Rchb.f., C.R.
 var. **aurantiaca** Rchb.f. = **M. reichenbachiana**
 var. **funebri** (Endres ex Kraenzl.) Kraenzl.
 = **M. reichenbachiana**
M. remotiflora Kraenzl. = **M. amanda**
M. renzii Luer, Col.
M. repanda Luer & Hirtz, Ecu.
M. replicata König, Peru
M. restrepiodea Kraenzl. = **M. fasciata**
M. revoluta König, Ecu.
M. rex Luer & Hirtz, Ecu.
M. rhinophora Luer & Escobar, Col.
M. rhodameliana Luer, Peru
M. rhopalura Schltr. = **M. molossoides**
M. richardsoniana Luer, Peru
M. richteri Pabst = **M. vargasii**
M. ricii Luer & Vásquez, Bol.
M. rigens Luer, Peru
M. rimarima-alba Luer, Peru
M. riograndensis hort. = **Dryadella** sp.
M. robusta Luer, Ecu.
M. rodolfoi (Braas) Luer subsp. **rodolfoi**, Peru
 subsp. **ortalis** (Luer) Luer = **M. ortalis**
M. rodrigueziana Mansf. = **M. wendlandiana**
M. roezlii Linden = **M. coccinea**
M. roezlii Rchb.f. = **Dracula roezlii** (Rchb.f.) Luer
M. rolandorum Luer & Sijm, Peru
M. rolfeana Kraenzl., C.R.
M. rosea Lindl. subsp. **rosea**, Ecu.
 subsp. **echinata** (Luer & Andreetta) Luer, Col., Ecu.
M. roseola Luer, Ecu.
M. rothschildiana hort. **nomen nudum**
M. rubeola Luer & Vásquez, Bol., Peru
M. rubiginosa König, Ecu., Peru
M. rufescens König, Ecu., Peru
M. rufolutea Lindl. = **M. picea**
M. saltatrix Rchb.f., Col.
M. sanchezii Luer & Andreetta, Ecu.
M. sanctae-fidei Kraenzl., Ven., Col.
M. sanctae-inesiae Luer & Malo, Ecu.
M. sanctae-rosae Kraenzl., Col.
M. sanguinea Luer & Andreetta, Ecu.
M. santiagoborum König = **M. aurea**
M. sarcophylla Kraenzl. = **M. campyloglossa**
M. saulii König = **M. fuchii**
M. scabrilinguis Luer, Pan., C.R.
M. scalpellifera Luer, Ecu.
M. scandens Rolfe, Bol.
M. scapha Braas = **M. navicularis**
M. sceptorum Rchb.f., Col., Ven.
M. schildhaueri König = **M. enata**
M. schizantha Kraenzl., Col.
M. schizopetala Kraenzl., C.R. Pan., Col., Bol.
M. schizostigma Luer, Peru
M. schlimii Linden ex Lindl.
 var. **polyantha** (Lindl.) Woolw. = **M. schlimii**
 var. **sceptorum** (Rchb.f.) Woolw. = **M. sceptorum**
M. schmidt-mummii Luer & Escobar, Col.
M. schmidchenii Kraenzl. = **M. molossus**
M. schoonenii Luer, Peru
M. schroederiae Boos (sphalm.) = **M. schroederiana**
M. schroederiana Sander ex Veitch, C.R.
 var. **fulvescens** (Rolfe) Kraenzl. = **M. fulvescens**
M. schudellii Luer, Ecu.
M. scitula König, Peru
M. scobina Luer & Escobar, Col.
M. scopaea Luer & Vásquez, Bol.
M. segrex Luer & Hirtz, Ecu.
M. securae Luer & Escobar, Col.
M. selenites König, Peru
M. semiteres Luer & Escobar, Peru
M. Xsenghasii Luer
M. senilis Rchb.f. = **M. chimaera** (Rchb.f.) Luer
M. serendipita Luer & Teague, Bol.
M. sernae Luer & Escobar, Col., Ecu.
M. sertula Luer & Andreetta, Ecu.
M. sessilis Barb. Rodr. = **Dryadella aviceps** (Rchb.f.) Luer
M. setacea Luer & Malo, Ecu., Peru
M. setipes Schltr., Bol.
M. severa Rchb.f. = **Dracula severa** (Rchb.f.) Luer
M. shiraishii König & M. Arias = **M. harlequina**
M. shuttleworthii Rchb.f. = **M. caudata**
 var. **xanthocorys** Rchb.f. = **M. caudata**
M. sijmiana König = **M. posadae**
M. simia Luer = **Dracula simia** (Luer) Luer
M. simula Rchb.f. = **Dryadella simula** (Rchb.f.) Luer
M. simulatrix Kraenzl. = **Dryadella simulatrix** (Kraenzl.) Luer
M. siphonantha Luer, Col.
M. smallmani Luer, Ecu.
M. sodiroi Schltr. = **Dracula sodiroi** (Luer) Luer
M. soennemarkii Luer & Dalström, Bol.
M. solomonii Luer & Vásquez, Bol.
M. solomonii Luer & Vásquez, Bol.
M. sororcula Rchb.f. = **M. mooreana**
M. spatulifolia Kraenzl. = **M. polysticta**
M. speciosa Luer & Malo = **XM. Doris**
M. spectrum Rchb.f. = **Dracula severa** (Rchb.f.) Luer
M. sphenopetala Kraenzl. = **M. corazonica**

- M. spilantha* Königer, Peru
M. xspendida Rchb.f., Peru
M. sprucei Rchb.f., Brazil, Ven.
M. staaliana Luer & Hirtz, Ecu.
M. stenantha Lehm. & Kraenzl. = *M. tubulosa*
M. stenorhynchos Kraenzl., Col.
M. stercorea Königer = *M. rigens*
M. stigli Luer & Jost
M. stirpis Luer
M. stratoniana, Luer & Hirtz, Ecu.
M. striatella Rchb.f., C.R.
M. strigosa Königer, Ecu.
M. strobilii Sweet & Garay, Ecu.
M. xstrumella Luer, Col.
M. strumifera Rchb.f., Col., Ven., Ecu.
M. strumosa P.Ortiz & E.Calderon, Col.
M. stumpflei Braas, Peru
M. subumbellata Kraenzl. = *M. bicolor*
M. sunii Luer & Hirtz, Ecu.
M. sulphurea Lehm. & Kraenzl. = *M. bonplandii*
M. sulphurella Königer, Peru
M. sumapazensis P. Ortiz, Col.
M. summersii L.O.Williams. = *Dryadella summersii* (L.O.Williams.) Luer
M. superflua Kraenzl. = *M. striatella*
M. surinamensis Focke = *M. minuta*
M. susanae Pabst = *Dryadella susanae* (Pabst) Luer
M. swertiiifolia Rchb.f. = *Scaphosepalum swertiiifolium* (Rchb.f.) Rolfe
M. xsynthesis Luer, Ven.
M. syringodes Luer & Andreetta = *M. tubulosa*
M. tarantula Luer = *Dracula tubeana* (Rchb.f.) Luer
M. teaguei Luer, Ecu.
M. tentaculata Luer, Ecu.
M. tenuicaudata Schltr. = *M. nidifica*
M. tenuipes Schltr. = *M. herradurae*
M. tenuissima C.Schweinf. = *Trisetella tenuissima* (C.Schweinf.) Luer
M. terborchii Luer, Peru
M. theleura Luer, Ecu.
M. thienii Dodson, C.R., Pan., Col., Ecu.
M. tinekeae Luer & Vásquez, Bol.
M. titan Luer, Peru
M. tokachiorum Luer, Pan.
M. tonduzii Woolw., C.R., Pan.
M. torta Rchb.f., Col.
M. torulosa Königer & J.Portilla = *M. carruthersiana*
M. tovarensis Rchb.f., Ven.
M. trautmänniana Luer & J.Portilla, Ecu.
M. trechsliniana Königer = *M. bryophila*
M. triangularis Lindl., Ven, Col., Ecu.
M. triaristella Rchb.f. = *Trisetella triaristella* (Rchb.f.) Luer
M. tricallosa Königer, Peru
M. tricarinata Lehm. & Kraenzl. = *Pleurothallis tricarinata* Poepp. & Endl.
M. triceratops Luer = *Dracula mopsus* (Lehm. & Kraenzl.) Luer
M. trichaete Rchb.f. = *Trisetella triglochis* (Rchb.f.) Luer
M. trichroma Schltr. = *Dracula iricolor*
M. tricolor Rchb.f. 1849, Col. = *M. caudata*
M. tricolor Rchb.f. 1882 (sphalm.) = *Dracula iricolor*
M. tricolor hort. = *M. coccinea*
M. tricycla Luer, Ecu.
M. tridactylites Rchb.f. = *Trisetella triglochis* (Rchb.f.) Luer
M. tridens Rchb.f., Ecu.
M. tridentata Lindl. = *M. infracta*
M. trifurcata Luer, Ecu.
M. triglochis Rchb.f. = *Trisetella triglochis* (Rchb.f.) Luer
M. trigonopetala Kraenzl., Col., Ecu.
M. trinema Rchb.f. = *Dracula velutina* (Rchb.f.) Luer
M. trinemoidea Kraenzl. = *M. fasciata*
M. trionyx Kraenzl. = *M. falcago*
M. trioön Sweet = *M. bangii*
M. triquetra Scheidw. = *M. infracta*
M. trisetata Rchb.f. ex Kraenzl. = *Trisetella triglochis* (Rchb.f.) Luer
M. trivenia Königer = *M. paquishae*
M. trochilus Lind. & André, Col., Ecu., Peru
M. troglodytes E. Morr. = *Dracula benedictii* (Rchb.f.) Luer
M. truncata Luer, Ecu.
M. tsubotae Luer, Col.
M. tubata Schltr., Bol.
M. tubeana Rchb.f. = *Dracula tubeana* (Rchb.f.) Luer
M. tubuliflora Ames, Guat., Belize, Hond., Nic., C.R.
M. tubulosa Lindl., Ven, Col., Ecu., Peru
 subsp. *syringodes* (Luer & Andreetta) Luer = *M. tubulosa*
M. tuerckheimii Ames = *M. floribunda*
M. ulei Schltr. = *M. wendlandiana*
M. uncifera Rchb.f., Col., Ecu.
M. uniflora Kunth = *M. coriacea* subsp. *bonplandii*
M. uniflora Ruiz & Pavón, Peru
M. urceolaris Kraenzl., Col.
M. urosalpinx Luer = *M. constricta*
M. urostachya Rchb.f. = *M. sceptrum*
M. ustulata Luer, Col., Ecu., Peru
M. utriculata Luer, Pan.
M. valenciana Luer & Escobar, Col.
M. vampira Luer = *Dracula vampira* (Luer) Luer
M. vargasii C.Schweinf., Col., Ecu., Peru, Bol., Brazil
M. vasquezii Luer, Bol.
M. veitchiana Rchb.f., Peru
 var. *biflora* Rchb.f. = *M. veitchiana*
 var. *grandiflora* B.S.Williams = *M. veitchiana*
M. velella Luer, Col.
M. velifera Rchb.f., Col.
M. velox Königer = *M. dalessandroi*
M. velutina Rchb.f. = *Dracula velutina* (Rchb.f.) Luer
M. venatoria Luer & Malo, Ecu.
M. venezuelana Sweet, Ven.
M. venosa Rolfe = *Dracula venosa* (Rolfe) Luer
M. ventricosa Schltr., Ecu.
M. ventricularia Rchb.f., Ecu., Col.
 var. *brevicaudata* Kraenzl. = *M. ventricularia*
 var. *longicaudata* Lehm. = *M. filaria*
 subsp. *filaria* (Luer & Escobar) Luer = *M. filaria*
M. venus Luer & Hirtz, Ecu.
M. venusta Schltr., Peru
M. venusta hort. *nomen nudum* = *M. coccinea*

- M. verecunda** Luer, Ven.
M. verrucosa Rchb.f. = **Scaphosepalum verrucosum** (Rchb.f.) Pfitz.
M. versicolor hort. = **M. coccinea**
M. vesperilio Rchb.f. = **Dracula vesperilio** (Rchb.f.) Luer
M. vexillifera Luer, Peru
M. vidua Luer & Andreetta, Ecu.
M. vieirana Luer & Escobar, Col.
M. villegasii Königer, Col.
M. virens Luer & Andreetta, Ecu.
M. virgo-cuencae Luer & Andreetta, Ecu.
M. vittata Luer = **Trisetella vittata** (Luer) Luer
M. vittatula Luer & Escobar, Col., Ecu
M. vomeris Luer, Peru
M. vulcanica Lehm. & Kraenzl. = **M. anachaeta**
M. wagneriana Linden ex Lindl., Ven.
 var. *colombiana* Braas = **M. pteroglossa**
 var. *ecuadorensis* Braas = **M. persicina**
 var. *pteroglossa* (Schltr.) Braas = **M. pteroglossa**
 var. *rodolfoi* Braas = **M. rodolfoi**
M. wallisii Rchb.f. = **Dracula wallisii** (Rchb.f.) Luer
M. walteri Luer, C.R.
M. weberbaueri Schltr., Peru, Ecu.
M. welischii Luer, Peru
M. wendlandiana Rchb.f., Brazil, Col., Bol., Peru, Ecu., Col.
M. whiteana Luer, Ecu., Peru
M. winniana Rchb.f. = **Dracula roezlii** (Rchb.f.) Luer
M. woolwardiae Lehm. & Kraenzl. = **Dracula woolwardiae** (Lehm. & Kraenzl.) Luer
M. Xwubbenii Luer, Ven.
M. wuefinghoffiana Luer & J.Portilla, Ecu.
- M. wuerstlei** Luer, Col.
M. wurdackii C.Schweinf., Peru
M. xanthina Rchb.f., Col., Ecu.
 var. *pallida* Woolw. = **M. xanthina**
 subsp. *klabochiorum* (Rchb.f.) Luer = **M. klabochiorum**
 subsp. *pallida* (Woolw.) Luer = **M. xanthina**
 subsp. *mandarina* Luer & Escobar = **M. mandarina**
M. xanthodactyla Rchb.f.
M. xanthura Schltr. = **M. bicolor**
M. xerophila Lehm. & Kraenzl. = **M. pteroglossa**
M. ximennae Luer & Hirtz, Ecu.
M. xiphères Rchb.f. = **Porroglossum muscosum** (Rchb.f.) Schltr.
M. xiphium Rchb.f. ex Kraenzl. = **M. ensata**
M. xyliua Rchb.f., Col.
M. yauaperyensis Barb.Rodr. = **M. wendlandiana**
M. yungasensis Hashimoto, Bol.
 subsp. *calocodon* (Luer & Vásquez) Luer = **M. yungasensis**
M. zahlbruckneri Kraenzl., C.R., Pan., Col., Ecu., Bol.
M. zamorensis Luer & J.Portilla, Ecu.
M. zapatae Luer & Escobar, Col.
M. zebracea Luer, Peru
M. zebrina Porsch = **Dryadella zebrina** (Porsch) Luer
M. zongoënsis Luer & Hirtz, Bol.
M. zumbae Luer, Ecu.
M. zumbuehlerae Luer, Ecu.
M. zygia Luer & Malo, Ecu.

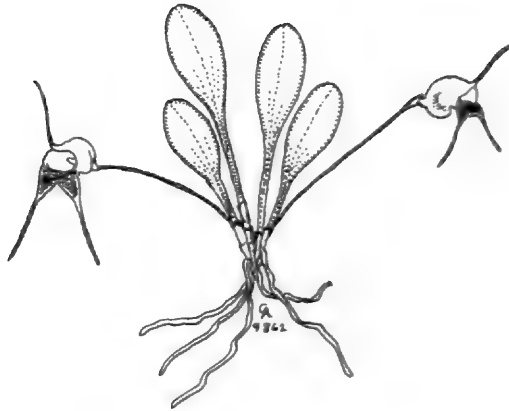


SPECIES OF OTHER GENERA DESCRIBED IN *MASDEVALLIA*

- Masdevallia albicans* Luer = **Dryadella**
Masdevallia allenii L.O.Williams = **Trisetella**
Masdevallia amethystina Rchb.f. = **Porroglossum**
Masdevallia anaristella Kraenzl. = **Barbosella**
Masdevallia anchorifera Rchb.f. = **Scaphosepalum**
Masdevallia andreetae Luer = **Dracula**
Masdevallia argus Rchb.f. ex Kraenzl. = **Zootrophion**
Masdevallia astuta Rchb.f. = **Dracula**
Masdevallia aviceps (Rchb.f.) Rchb.f. = **Dryadella**
Masdevallia backhousiana Rchb.f. = **Dracula**
Masdevallia benedictii Rchb.f. = **Dracula**
Masdevallia bomboiza Fiske = **Dracula**
Masdevallia bradei Schltr. ex Hoehne = **Dryadella**
Masdevallia brevis Rchb.f. = **Scaphosepalum**
Masdevallia burbridgeana Rolfe = **Dracula**
Masdevallia callifera Schltr. = **Dracula**
Masdevallia carderi Rchb.f. = **Dracula**
Masdevallia carderiopsis Kraenzl. = **Dracula**
Masdevallia carinata Cogn. = **Dryadella**
Masdevallia carpophora Kraenzl. = **Pleurothallis**
Masdevallia chertertonii Rchb.f. = **Dracula**
Masdevallia chimaera Rchb.f. = **Dracula**
Masdevallia chimaera Linden & André = **Dracula**
Masdevallia colombiana (Schltr.) P.H. Allen
 ex Hodge & Gutier = **Porroglossum**
Masdevallia crenulata Pabst = **Dryadella**
Masdevallia culex Rchb.f. = **Pleurothallis**
Masdevallia dayana Rchb.f. = **Zootrophion**
Masdevallia deltoidea Luer = **Dracula**
Masdevallia dodsonii Luer = **Dracula**
Masdevallia dolichopoda Luer = **Dryadella**
Masdevallia echidna Rchb.f. = **Porroglossum**
Masdevallia eduardii Rchb.f. = **Porroglossum**
Masdevallia edwallii Cogn. = **Dryadella**
Masdevallia elata Luer = **Dryadella**
Masdevallia erythrochaete Rchb.f. = **Dracula**
Masdevallia felix Luer = **Dracula**
Masdevallia fimbriata Ames & C.Schweinf. =
Pleurothallis
Masdevallia fenestrata Lindl. ex Hook. = **Zootrophion**
Masdevallia fuliginosa Luer = **Dracula**
Masdevallia gaskelliana Rchb.f. = **Dracula**
Masdevallia gigas Luer & Andreetta = **Dracula**
Masdevallia gomes-ferreirae = **Dryadella**
Masdevallia gorgo Rchb.f. ex Kraenzl. = **Dracula**
Masdevallia gorgona hort. ex Veitch = **Dracula**
Masdevallia gracilentia Rchb.f. = **Zootrophion**
Masdevallia guatemalensis Schltr. = **Dryadella**
Masdevallia hornii König = **Pleurothallis**
Masdevallia houtteana Rchb.f. = **Dracula**
Masdevallia huebneri Schltr. = **Trisetella**
Masdevallia hypodiscus Rchb.f. = **Zootrophion**
Masdevallia inaequalis Rchb.f. = **Dracula**
Masdevallia jalapensis Kraenzl. = **Pleurothallis**
Masdevallia janetiae Luer = **Dracula**
Masdevallia johannis Schltr. = **Dracula**
Masdevallia kalbreyerianus Kraenzl.
 = **Ornithocephalus**
Masdevallia kautskyi Pabst = **Dryadella**
Masdevallia lactea Kraenzl. = **Dracula**
Masdevallia lilliputiana Cogn. = **Dryadella**
Masdevallia linearifolia Ames = **Dryadella**
Masdevallia longiflora Kraenzl. = **Barbosella**
Masdevallia lotax Luer = **Dracula**
Masdevallia lowii Rolfe = **Dracula**
Masdevallia macrochila Regel = **Dracula**
Masdevallia macrodactyla Rchb.f. = **Scaphosepalum**
Masdevallia medellinensis Kraenzl. = **Dracula**
Masdevallia meiracyllium Rchb.f. = **Dryadella**
Masdevallia melloi Pabst = **Dryadella**
Masdevallia microglochis Rchb.f. = **Dracula**
Masdevallia mopsus Lehm. & Kraenzl. = **Dracula**
Masdevallia mordax Rchb.f. = **Porroglossum**
Masdevallia mosquerae Lehm. & Kraenzl. = **Dracula**
Masdevallia muscosa Rchb.f. = **Porroglossum**
Masdevallia nycterina Rchb.f. = **Dracula**
Masdevallia obrieniana Rolfe = **Dryadella**
Masdevallia ochthodes Rchb.f. = **Scaphosepalum**
Masdevallia paranaensis Schltr. = **Dryadella**
Masdevallia paulensis Barb.Rodr. = **Dryadella**
Masdevallia pelecanciceps Luer = **Luerella**
Masdevallia perpusilla Kraenzl. = **Dryadella**
Masdevallia platycrater Rchb.f. = **Dracula**
Masdevallia polyphemus Luer = **Dracula**
Masdevallia popayanensis Lehm. & Kraenzl.
 = **Dryadella**
Masdevallia psittacina Rchb.f. = **Dracula**
Masdevallia psyche Luer = **Dracula**
Masdevallia pulex hort. ex Rchb.f. = **Pleurothallis**
Masdevallia pulvinaris Rchb.f. = **Scaphosepalum**
Masdevallia punctata Rolfe = **Scaphosepalum**
Masdevallia pusilla Rolfe = **Dracula**
Masdevallia pusiola Rchb.f. = **Dryadella**
Masdevallia quilichaoensis Lehm. & Kraenzl.
 = **Dracula**
Masdevallia radiosa Rchb.f. = **Dracula**
Masdevallia roezlii Rchb.f. = **Dracula**
Masdevallia senilis Rchb.f. = **Dracula**
Masdevallia sessilis Barb.Rodr. = **Dryadella**
Masdevallia severa Rchb.f. = **Dracula**
Masdevallia simia Luer = **Dracula**
Masdevallia simula Rchb.f. = **Dryadella**
Masdevallia simulatrix Kraenzl. = **Dryadella**
Masdevallia sodiroi Schltr. = **Dracula**
Masdevallia spectrum Rchb.f. = **Dracula**
Masdevallia summersii L.O.Williams = **Dryadella**
Masdevallia susanae Pabst = **Dryadella**
Masdevallia swertiifolia Rchb.f. = **Scaphosepalum**
Masdevallia tarantula Luer = **Dracula**
Masdevallia triaristella Rchb.f. = **Trisetella**
Masdevallia tricarinata Lehm. & Kraenzl.
 = **Pleurothallis**
Masdevallia triceratops Luer = **Dracula**
Masdevallia trichaca Rchb.f. = **Trisetella**
Masdevallia trichroma Schltr. = **Dracula**

Masdevallia tricolor Rchb.f. = **Dracula**
Masdevallia tridactylites Rchb.f. = **Trisetella**
Masdevallia triglochin Rchb.f. = **Trisetella**
Masdevallia trinema Rchb.f. = **Dracula**
Masdevallia tripeta Rchb.f. = **Trisetella**
Masdevallia triseta Rchb.f. ex Kraenzl. = **Trisetella**
Masdevallia troglodytes Morren = **Dracula**
Masdevallia tubeana Rchb.f. = **Dracula**
Masdevallia winniana Rchb.f. = **Dracula**
Masdevallia vampira Luer = **Dracula**

Masdevallia velutina Rchb.f. = **Dracula**
Masdevallia venosa Rolfe = **Dracula**
Masdevallia verrucosa Rchb.f. = **Scaphosepalum**
Masdevallia vespertilio Rchb.f. = **Dracula**
Masdevallia wallisii Rchb.f. = **Dracula**
Masdevallia woolwardiae Lehm. ex Kraenzl.
 = **Dracula**
Masdevallia xiphères Rchb.f. = **Porroglossum**
Masdevallia zebrina Porsch = **Dryadella**



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MASDEVALLIA

Masdevallia Ruiz & Pav., Fl. Peruv. Chil. Prodr. 122, 1794.

Type: *Masdevallia uniflora* Ruiz & Pav.

Ety.: Named in honor of José Masdevall, physician in the court of Charles III of Spain.

Syn.: *Diodonopsis* Pridgeon & M.W. Chase, Lindlyana 16: 252, 2001.

Type: *Masdevallia pygmaea* Kraenzl.

Ety.: From *Diodon*, the genus of porcupinefish, alluding to the spiculate ovary.

Plants perennial, very small to large, weak to robust, epiphytic, lithophytic to terrestrial, the rhizome very short to elongate between aerial stems (ramicauls); roots few to many, slender to coarse or fleshy. Ramicauls ascending to erect, rarely descending, slender to stout, non-pseudobulbous, shorter than the leaf, unifoliolate, partially or completely enclosed by 2-3 imbricating sheaths from near the base, the inflorescence emerging laterally with an annular ring (annulus) from near the base or near the middle, a considerable distance below the apex (the leaf-stem abscission layer). **Leaf** erect in relation to the ramicaul, thinly to thickly coriaceous, smooth, green or dark green, uncommonly suffused with purple, elliptical to narrowly elliptical or obovate to narrowly obovate, the apex acute, obtuse to rounded, shallowly notched with a mucro in the sinus, the base broadly or narrowly cuneate into a more or less channeled petiole. **Inflorescence** a solitary flower, a succession of single flowers, or a successively or simultaneously few- to many-flowered raceme, lax or congested, longer or shorter than the leaf, the peduncle slender to stout, short or long, round to triangular in cross section, shaggy-scabrous in one species, with 1-3 bracts, when triquetrous only basal; floral bract thin and tubular to coarse and cucullate; pedicel slender to stout, longer or shorter than the floral bract; ovary smooth, lamellate, crested, verrucose to papillose, trivalvate with the ribs smooth, carinate to crested; **sepals** conspicuous, membranous to thickly fleshy, variously colored, smooth to verrucose or pubescent, broad to narrow, acute to obtuse, nearly free to deeply connate, usually with the apices contracted into elongated segments (tails) that are rarely clavate; **petals** inconspicuous, thin to cartilaginous, usually longitudinally callous, often produced into a tooth on the labellar half or margin, at or above the base; **lip** usually inconspicuous, thin to thick, ligulate to pandurate, the apex acute, obtuse to rounded, smooth to verrucose, with or without a callus, entire or denticulate, the disc smooth or with a pair of longitudinal calli, often extending over the margins with oblique folds that create an epichile and a hypochile, the base truncate to cordate, hinged on the end or beneath; **column** semiterete, the anther ventral, more or less hooded, the apical margins of the column entire to lightly toothed, the rostellum retrorse, the pollinia 2, yellow, pyriform, with elastic, more or less granular caudicles, the stigma ventral, the base of the column developed into a column-foot with the apex of the ovary, often elongated beyond the ovary, with an incurved extension to which the lip is attached.

The genus *Masdevallia* is presently divided into 10 subgenera, 13 sections and 13 subsections. The proposal of *Diodonopsis* for five species of *Masdevallia* subgenus *Pygmaea* is unwarranted (Luer, 2002).

Subgenera, Sections and Subsections of *Masdevallia*

Subgenus *Amanda*, type: *M. amanda*
 Subgenus *Cucullata*, type: *M. cucullata*
 Subgenus *Fissia*, type: *M. picturata*
 Subgenus *Masdevallia*, type: *M. uniflora*
 Section *Coriaceae*, type: *M. coriacea*
 Section *Dentatae*, type: *M. collina*
 Section *Duratae*, type: *M. dura*
 Section *Masdevallia*, type: *M. uniflora*
 Subsection *Caudatae*, type: *M. caudata*
 Subsection *Coccineae*, type: *M. coccinea*
 Subsection *Masdevallia*, type: *M. uniflora*
 Subsection *Oscillantes*, type:
M. wagneriana
 Subsection *Saltatrices*, type: *M. saltatrix*
 Section *Minutae*, type: *M. minuta*
 Section *Racemosae*, type: *M. racemosa*
 Section *Reichenbachianae*, type:
M. reichenbachiana
 Section *Triotosiphon*, type: *M. bangii*
 Subgenus *Meleagris*, type: *M. meleagris*

Subgenus *Nidificia*, type: *M. nidifica*
 Subgenus *Polyantha*, type: *M. schlimii*
 Section *Alaticaulae*, type: *M. melanoxantha*
 Subsection *Alaticaulae*, type: *M. melanoxantha*
 Subsection *Coetanetae*, type: *M. sceptrum*
 Section *Polyanthae*, type: *M. schlimii*
 Subsection *Polyanthae*, type: *M. schlimii*
 Subsection *Successiviflorae*, type: *M. lata*
 Subgenus *Pygmaea*, type: *M. pygmaea*
 Section *Amaluzae*, type: *M. amaluzae*
 Subsection *Amaluzae*, type: *M. amaluzae*
 Subsection *Zahlbrucknerae*, type:
M. zahlbruckneri
 Section *Aphanes*, type: *M. aphanes*
 Subsection *Aphanes*, type: *M. aphanes*
 Subsection *Pterygiophorae*, type:
M. pterygiophora
 Section *Pygmaeae*, type: *M. pygmaea*
 Subgenus *Scabripes*, type: *M. bicornis*
 Subgenus *Volvula*, type: *M. caudivolvula*

KEY TO THE SUBGENERA AND SECTIONS OF *MASDEVALLIA*

- 1 Lip undivided, with or without calli2
 1' Lip divided by marginal folds into two parts, an epichile and a hypochile.....19
- 2 Rhizome elongated, plant repent3
 2' Rhizome abbreviated, plant caespitose4
- 3 Inflorescence racemose; lateral sepals tailless.....*Masdevallia* sect. *Racemosae*
 3' Inflorescence single-flowered; sepals caudate.....subsect. *Masdevallia*
- 4 Peduncle scabrous..... *Scabripes*
 4' Peduncle smooth5
- 5 Inflorescence 1-flowered6
 5' Inflorescence 2- or more-flowered, or successively flowered.....12
- 6 Ovary variously ornamented7
 6' Ovary not ornamented, but may have low carinae or ribs.....8
- 7 Ovary carinate-crested; sepals tailless or contracted into short, thick tails.....
 *Pygmaeia* sect. *Aphanes*
 7' Ovary spiculate to papillose; sepals caudate.....*Pygmaeia* sect. *Pygmaeae*
- 8 Petals without a protruding process9
 8' Petals with a protruding process.....11b
- 9 Sepals deeply connate into a tube constricted above the middle.....
 *Masdevallia* sect. *Triotosiphon*
 9' Sepals not connate into a constricted tube.....10
- 10 Lip thick, verrucose at the apex.....*Masdevallia* sect. *Coriaceae*
 10' Lip thin, smooth or microscopically verrucose at the apex.....11a
- 11a Plant small, weak; sepals membranous.....*Pygmaea* sect. *Amaluzae*
 11a' Plant strong, robust; sepals fleshy.....*Masdevallia* sect. *Reichenbachianae*
- 11b Petals with a small callus above or along the margin...*Masdevallia* sect. *Minutae*
 11b' Petals with a protruding, marginal process.....*Masdevallia* sect. *Masdevallia*
- 12 Sepals free, with the bases of the lateral sepals forming a shallow cup with a curved column-foot; lip entire or with ill-defined marginal folds.....
subgen. *Meleagris*
 12' Sepals variously connate13
- 13 Ovary variously ornamented14
 13' Ovary not ornamented, but costate, ribbed or smooth.....15
- 14 Ovary crested; lateral sepals tailless.....*Pygmaeia* sect. *Aphanes*
 14' Ovary and sepals echinate; sepals caudate-clavate.....*Pygmaeia* sect. *Pygmaeae*

Masdevallia ametroglossa Luer & Hirtz, sp. nov.

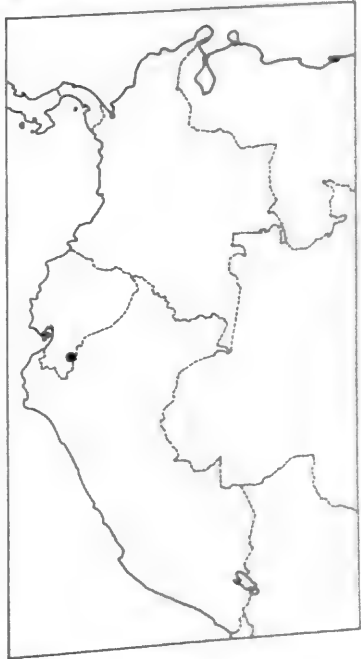
Ety.: From the Greek *ametroglossa*, "an immense tongue," referring to the labellum.

Inter species sect. *Alaticaulis*, planta mediocris parvave, pedunculo longissimo, flore mediocri, sepalis lateralibus revolutis in tubo formantibus, petalis oblongis ad basim incrassatis, et labello immenso protuberanti distinguitur.

Plant medium in size, epiphytic, caespitose; roots fleshy. Ramicauls stout, erect, 1.5-2 cm long, enclosed by 2 loose, tubular sheaths. **Leaf** erect, thickly coriaceous, narrowly elliptical-obovate, subacute to obtuse, 10-11 cm long, 1.4-1.8 cm wide, gradually narrowed below into an ill-defined petiole. **Inflorescence** a congested, successively flowered raceme, borne by a stout, erect, triquetrous peduncle, 24-27 cm long, with a bract at the base, from low on the ramicaul; floral bracts imbricating, oblique, 10 mm long; pedicels ca. 5 mm long; ovary 7 mm long; **sepals** fleshy, light yellow-green, glabrous, the blade of the dorsal sepal obovate, 12 mm long, 10 mm wide, 3-veined, connate to the lateral sepals for 10 mm to form a cylindrical sepaline tube, the free portion broadly triangular, subacute, contracted into an erect or recurved, stout, yellow-green tail 25-30 mm long, the lateral sepals connate 25 mm into a subovoid synsepal 40 mm long, 18 mm wide, 6-veined, concave basally, with the sides recurved beyond the tube into cylindrical, contiguous tubes, with the free ends 10-12 mm long; **petals** white, oblong, 10 mm long, 3 mm wide, the apex tridentate, the labellar half with a low, longitudinal callus along the margin ending in a globose swelling at the base; **lip** greenish white, oblong-subpanduriform, 15 mm long, 5 mm wide, with a pair of longitudinal carinae with oblique folds below the middle, the epichile cellular, elliptical, obtuse, with a midline callus, also callous beneath the tip, the hypochile oblong, shallowly concave between the carinae, the base truncate, retuse, with a pair of calli flanking a shallow, central cleft, hinged beneath; **column** semiterete, 4 mm long, the foot 2 mm long with a distinct, incurved extension.

ECUADOR: **Zamora-Chinipe**: Cordillera del Condor, Nangariza Zurmi, alt. 800 m, cultivated at Ecuagenera, Gualaceo, Ecuador, 11 July 2002, A. Hirtz 8386 (Holotype: MO), C. Luer illustr. 20194.

This species, recently found in the Cordillera del Condor, is a member of the section *Alaticaulis*. Vegetatively, it is relatively small for the subsection, but with a proportionately long, stout peduncle. The flower is yellow-green and of average size. The tail of the dorsal sepal is erect or slightly recurved; the sides of the lateral sepals beyond the sepaline tube are recurved individually into adjacent tubes. The immense lip protrudes beyond the orifice of the sepaline tube.



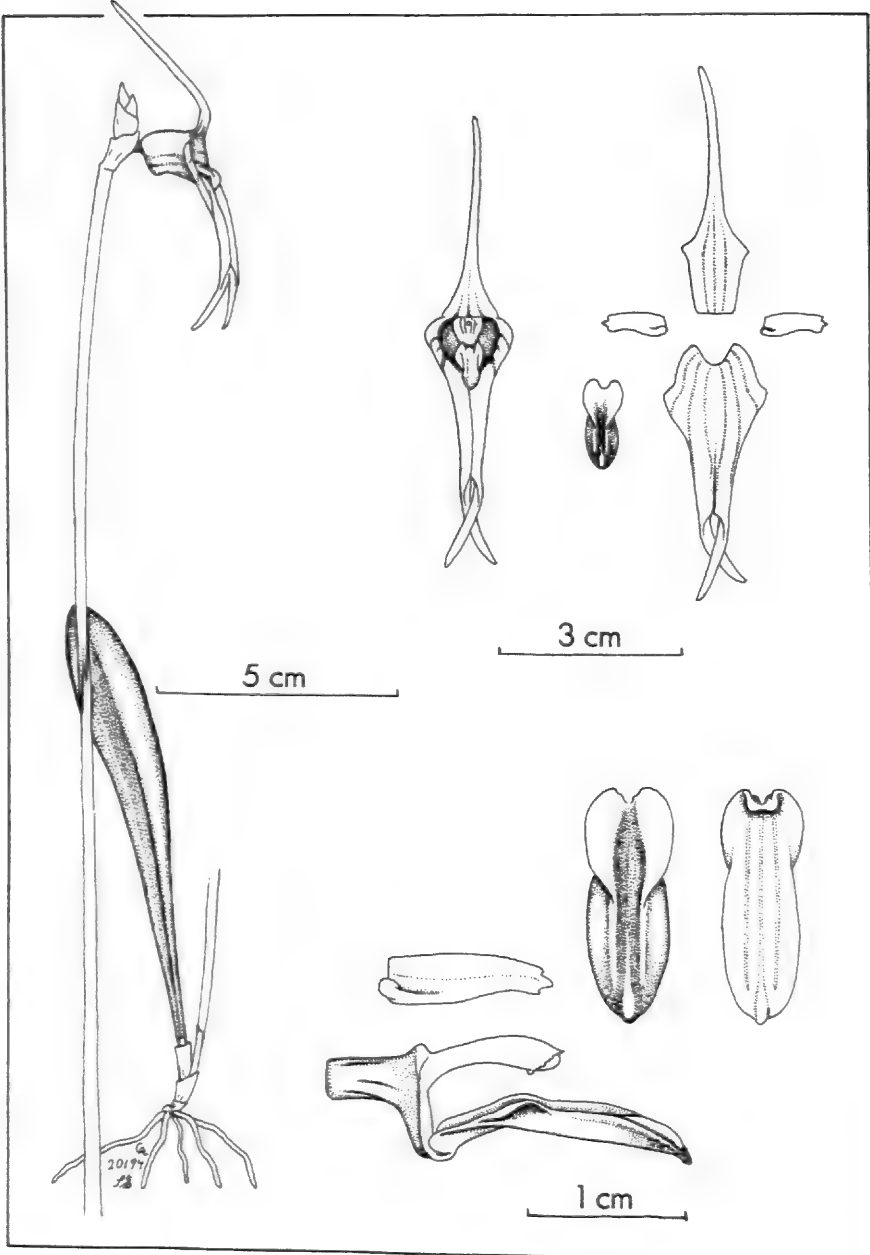


Plate 649. *Masdevallia ametroglossa*

Masdevallia loui Luer & Dalström, sp. nov.

Ety.: Named for Louis (Lou) Jost, physicist, naturalist, ornithologist, orchidologist, artist, and freelance author, presently living in Baños, Ecuador, co-collector of this species.

Planta parva, pedunculo pendenti triquetri successivifloro, sepalorum caudibus brevissimis crassis-simus, petalis oblongis, et labello illis subgen. *Polyantheae* similis.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, less than 1 cm long, enclosed by 2 tubular sheaths. **Leaf** erect, thickly coriaceous, 2-5.5 cm long including a petiole 1-1.5 cm long, the blade narrowly elliptical, subacute to obtuse, 0.9-1.5 cm wide, gradually narrowed below into the petiole. **Inflorescence** a succession of single flowers, borne in a congested raceme by descending, triquetrous peduncle, 1-3 cm long, with a bract at the base of a ramicaul; floral bract tubular, oblique, 5-7 mm long; pedicel 5 mm long; ovary 3 mm long; **sepals** pale brown with numerous purple specks, fleshy, glabrous externally, minutely tubercular within, the dorsal sepal obovate, 9 mm long, 5 mm wide, 3-veined, connate 7 mm into a short, cylindrical tube, the apex obtuse, contracted into an erect, stout tail 10 mm long, the lateral sepals connate 14 mm into a broad, ovate, obtuse synsepal with a secondary mentum below the middle, 10 mm wide beyond the tube, 18 mm long including thick tails ca. 1.5 mm long; **petals** cartilagenous, translucent white with purple specks, oblong, 4.5 mm long, 1.5 mm wide, the apex truncate, minutely apiculate, the labellar half with a low, longitudinal callus; **lip** lip yellow with purple specks, subpanduriform, 5.5 mm long, 2 mm wide, with a pair of oblique, marginal folds above the middle that form an ovate epichile 2 mm long, and an oblong hypochile 3 mm long, the apex rounded, minutely apiculate, minutely verrucose, the disc shallowly channeled centrally, the base truncate, hinged beneath; **column** semiterete, 3.5 mm long, the foot 2 mm long with a very short, incurved extension.

ECUADOR: **Pastaza**: humid forest, Río Anzu, alt. 1400 m, collected by S. Dalström and L. Jost, 23 Dec. 2002, *S. Dalström 2746* (Holotype: QCA), C. Luer illustr. 20427.

This little species is one of only a few known species in subgenus *Polyanthea* section *Alaticaulis* with a descending, triquetrous peduncle. It is characterized by an unusually, small, caespitose habit and a short, strictly pendent peduncle. Superficially, it resembles *M. zahlbuckneri*. The pattern of the small flower is basically similar to many other members of the subgenus *Polyanthea*. The three sepals are connate into a short, cylindrical tube beyond which the synsepal expands, with the obtuse tips terminated by very short, thick tails. A secondary mentum accommodates the lip.



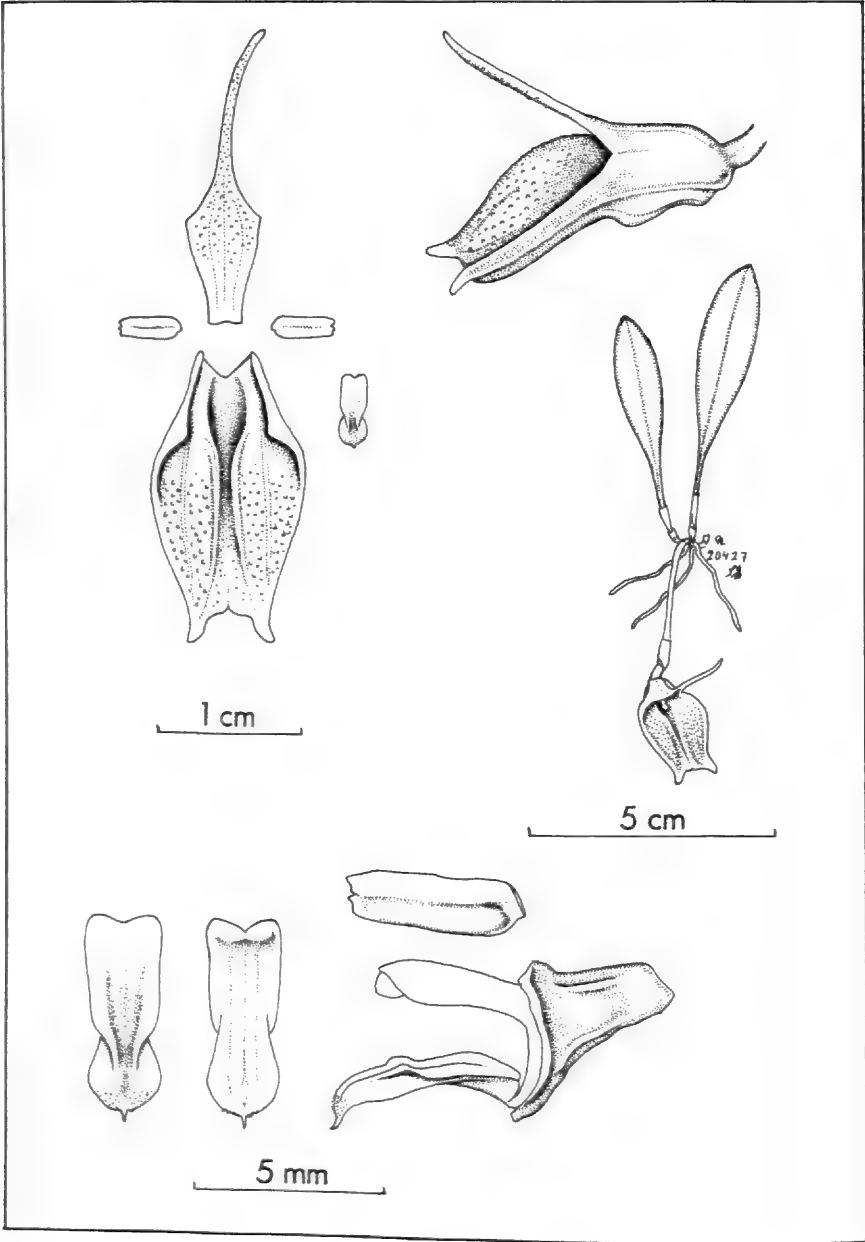


Plate 650. *Masdevallia loui*

Masdevallia plynophora Luer, sp. nov.

Ety.: From the Greek *plynophorus*, "bearing a washtub," referring to the basin-like synsepal.

Species haec *M. trochili* Linden & André affinis, sed sepalis lateralibus non incurvis et bracteis floralibus, petalis labelloque longioribus differt.

Plant large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 4-4.5 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, thickly coriaceous, 10-25 cm long including the petiole 2-6 cm long, the blade elliptical, obtuse, 2.2-3 cm wide, narrowly cuneate below into the stout, channeled petiole. **Inflorescence** a subcongested, successively flowered raceme up to 10 cm long, borne by a suberect, stout, triquetrous peduncle 20-40 cm long, up to 0.5 cm broad, with a bract at the base, from low on the ramicaul; floral bracts foliaceous, imbricating, 2.2-4.5 cm long; pedicel 4-4.5 cm long; ovary 5 mm long; **dorsal sepal** yellow, obovate, ca. 22 mm long, 8 mm wide, connate to the lateral sepals for 9 mm to form a cylindrical sepaline tube, the free portion ovate, acute, contracted into a slender, erect tail ca. 8 cm long; **lateral sepals** yellow, mottled with red-brown, connate 25 mm to form a synsepal 35 mm long, 25 mm wide unexpanded, concave above the middle, 15 mm deep, with the sides more or less erect, not incurved, the veins prominent within and verrucose toward the apices, the apices subacute, approximate, contracted into slender tails 5 cm long; **petals** white, oblong, 9 mm long, 2.25 mm wide, the apex narrowly tridentate, the labellar half longitudinally callous-thickened; **lip** white, diffusely dotted with purple, oblong-pandurate, 8.5 mm long, 2 mm wide, with prominent, obtuse, lobe-like, marginal folds near the middle, the epichile elliptical with the apex minutely verrucose, subacute, apiculate, the hypochile narrowly oblong, the base subcordate, hinged on the end; **column** white, semiterete, 7 mm long, the foot stout, 3 mm long, with a short, incurved extension.

PERU: Amazonas: La Providencia, alt. 2300 m, collected by J. Meza, cultivated by B. Würstle at Spielberg, Germany, 1 Sept. 1984, *C. Luer 10432* (Holotype: MO). Without collection data, purchased from J. Meza, cultivated by A. Maduro at Finca Dracula, Cerro Punta, Chiriquí, Panama, 14 Nov. 1998, *C. Luer 18981* (MO).

Masdevallia plynophora is very closely allied to the relatively frequent and widely distributed *M. trochilus*, and could possibly be treated as a variation. Vegetatively, they are indistinguishable, except for the longer average lengths of the floral bracts and pedicels.

The differences in the appearance of the flowers are remarkable. Instead of the lateral sepals incurved into a closed, egg-shaped synsepal, the synsepal is gaping and bowl-shaped, probably enticing pollinators other than hummingbirds. An illustration of this species was identified as *M. acrochordonia* in part-one of this series. When the true *M. acrochordonia* was recognized in the area of its first collection, it was obvious that this present species was not the same.

Masdevallia plynophora is apparently restricted to Amazonian Peru, where it probably grows with *M. trochilus*. It was first recognized in a collection obtained from Jorge Meza and cultivated by Berthold Würstle in 1984. A second collection was seen among plants of typical *M. trochilus*, also obtained from Meza, and cultivated by Andres Maduro in 1998.



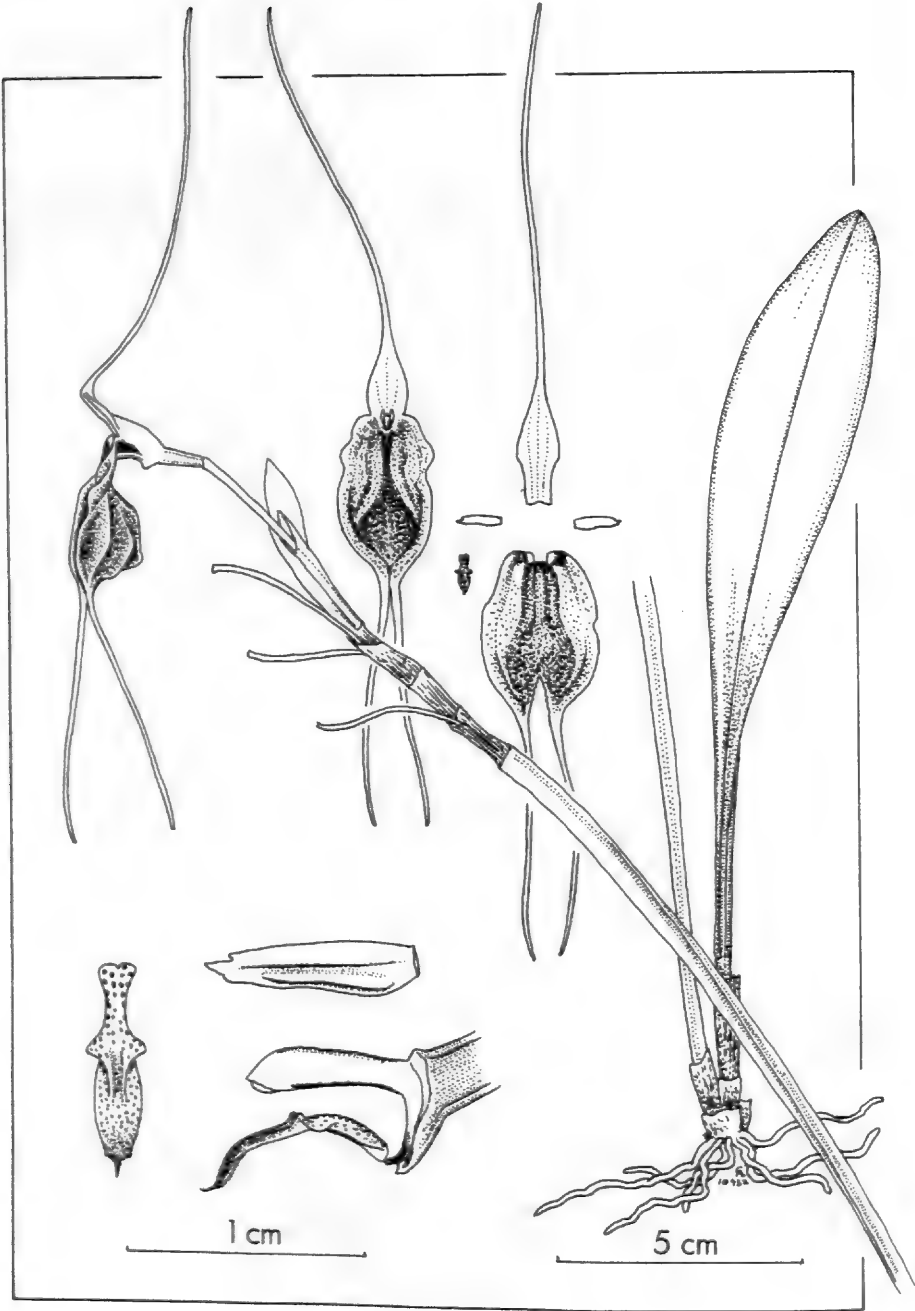


Plate 651. *Masdevallia plynophora*

Masdevallia rechingeriana Kraenzl., *Repert. Spec. Nov. Regni Veg.* 17: 424, 1921.
Ety.: Named for Dr. K. Rechanger, Austrian botanist and friend of Kränzlin.

Plant large, robust, epiphytic, caespitose; roots coarse. **Ramicals** erect, stout, 2-3 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, rigid, thickly coriaceous, 10-11 cm long including the petiole 1.5-2 cm long, the blade elliptical-obovate, obtuse to rounded at the apex, 2-2.5 cm wide, cuneate below into the petiole. **Inflorescence** a congested, successively few-flowered raceme, borne by a stout, erect, triquetrous peduncle 20 cm long, with a bract at the base, from the base of a ramical; floral bracts thin, tubular, imbricating, 10-14 mm long; pedicels 12-17 mm long; ovary 5-6 mm long; **sepals** glabrous, microscopically cellular-verrucose within, the dorsal sepal yellow, lightly suffused with purple above the middle, elliptical-obovate, ca. 15 mm long, 9 mm wide, connate to the lateral sepals for 8 mm to form a short, sepaline tube, the apex acute, acuminate, into a erect, slender, yellow-green tail 3.5 cm long, the lateral sepals dark purple, ovate, oblique, ca. 22 mm long, connate 17 mm into an ovate, bifid lamina 17 mm wide, with a shallow mentum, the apices acute, contracted into slender, yellow-green tails 2.5 cm long; **petals** greenish white, oblong, 7 mm long, 2 mm wide, the apex irregularly bilobulate, the labellar half with a longitudinal callus, rounded above the base; **lip** yellow, diffusely dotted with red-purple, oblong-subpandurate, 6.5 mm long, 2.75 mm wide, with rounded marginal folds near the middle, the epichile ovate, acute, denticulate-erose, verrucose, smooth on the undersurface, the hypochile oblong, subcordate, hinged beneath; **column** green, semiterete, 5 mm long, the foot 2 mm long, thick, with a short, incurved extension.

VENEZUELA: **Aragua**: near Colonia Tovar, *Arnold s.n.* (Holotype: W). Without locality, collected by C. Wubben, cultivated in 2001 in Staffordshire, England, by *Sue Skittrell s.n.* (MO), C. Luer illustr. 20080.

Masdevallia rechingeriana was first collected near Colonia Tovar in the coastal range of northern Venezuela. It was known to me only from the type-collection at W, which is represented by only two pressed flowers. It was erroneously believed to be a collection of *M. sceptrum* (*Systematics of Masdevallia Part One*). A recent collection, most likely from the same area, no doubt represents this species in spite of an absent keel beneath the apex of the lip as reported by Kränzlin.

This species is characterized by a robust habit, and a stout, triquetrous peduncle considerably longer than the leaves. The flowers are produced successively in a congested raceme. The dorsal sepal is yellowish and attenuated; the synsepal is dark purple, deeply connate with the apices separated by an acute angle. The tails are about as long as the blade. The petals are oblong and simply callous on the lower margin. The lip is oblong with rounded, marginal folds near the middle and an acute, verrucose apex.

Masdevallia tsubotae, from Colombia but without collection data, appears very similar, and may prove to be synonymous.



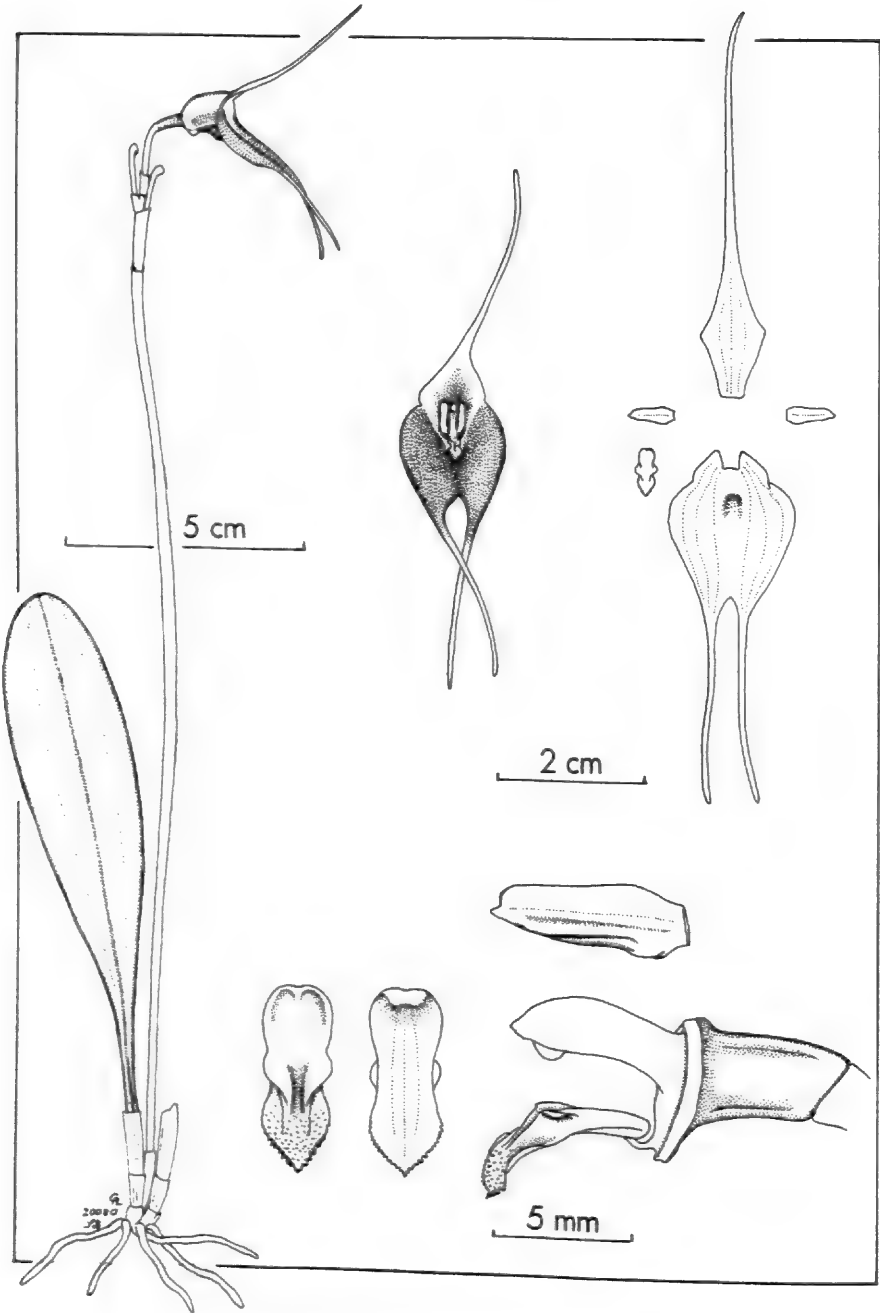


Plate 652. *Masdevallia rechingeriana*

Masdevallia rolandorum Luer & Sijm, sp. nov.

Ety.: Named for Dr. and Sra. Isafías Rolando of Lima, Peru, who cultivated this species.

Inter species sect. *Alaticaulaes*, planta grandis, pedunculo crasso longissimo, flore grandi, sepalis lateralibus late expansis minute papillosis, petalis oblongis ad basim incrassatis, et labello late oblongo bialato ad apicem minute rugoso distinguitur.

Plant large, epiphytic, caespitose; roots fleshy. Ramicauls stout, erect, 4 cm long, enclosed by 2 loose, tubular sheaths. **Leaf** erect, thickly coriaceous, narrowly elliptical-obovate, subacute to obtuse, 23 cm long, 2.5 cm wide, gradually narrowed below into an ill-defined petiole ca. 4 cm long. **Inflorescence** a congested, successively flowered raceme, up to 5 cm long, borne by a stout, erect, triquetrous peduncle, 32 cm long, with a bract at the base, from low on the ramicaul; floral bracts imbricating, oblique, 15-25 mm long; pedicels 18-23 mm long; ovary 7 mm long; **sepals** fleshy, the dorsal sepal light yellow-green, glabrous, ovate, 15 mm long (the entire length 5 cm), 11 mm wide, 3-veined, connate to the lateral sepals for 7 mm to form a short, cylindrical sepaline tube, the free portion broadly triangular, acute, contracted into an erect, stout, yellow-green tail ca. 3.5 cm long, the lateral sepals purple, connate 36 mm into an ovate, minutely papillose synsepal 47 mm long, 23 mm wide, 6-veined, concave basally, expanded and convex beyond the tube, with the free ends narrowly triangular, ca. 10 mm long; **petals** white, oblong, 8 mm long, 3.5 mm wide, the apex subdentate, the labellar half with a low, longitudinal callus along the margin ending in a broad thickening at the base; **lip** purple, broadly oblong, 7.5 mm long, 4.25 mm wide, with a pair of oblique, overhanging folds at the middle, the epichile minutely verrucose, rounded, thickened and minutely rugose extending beneath the tip, the hypochile oblong, shallowly concave, the base truncate, shallowly retuse, hinged beneath; **column** semiterete, 7 mm long, the foot 5 mm long with a distinct, incurved extension.

PERU: **Amazonas**: near Moyabamba, alt. 700 m, collected by Renato Villena, obtained from Dr. Isafías Rolando, cultivated at Venhuizen, the Netherlands, July 2002, by A.P. Sijm 220209 (Holotype: MO), C. Luer illustr. 20168.

This large species is fundamentally similar to many of the other species of section *Alaticaulaes*. It is distinguished from them by the large habit and a long, stout peduncle over 30 centimeters long. The flower is large with a broadly expanded, convex, minutely papillose, uniformly purple synsepal that ends in short, acuminate, tail-like apices. The petals are thick and broadly oblong. The lip is also broadly oblong with a thick, minutely rugose apex. The usual folds are thick, nearly transverse and overhanging.



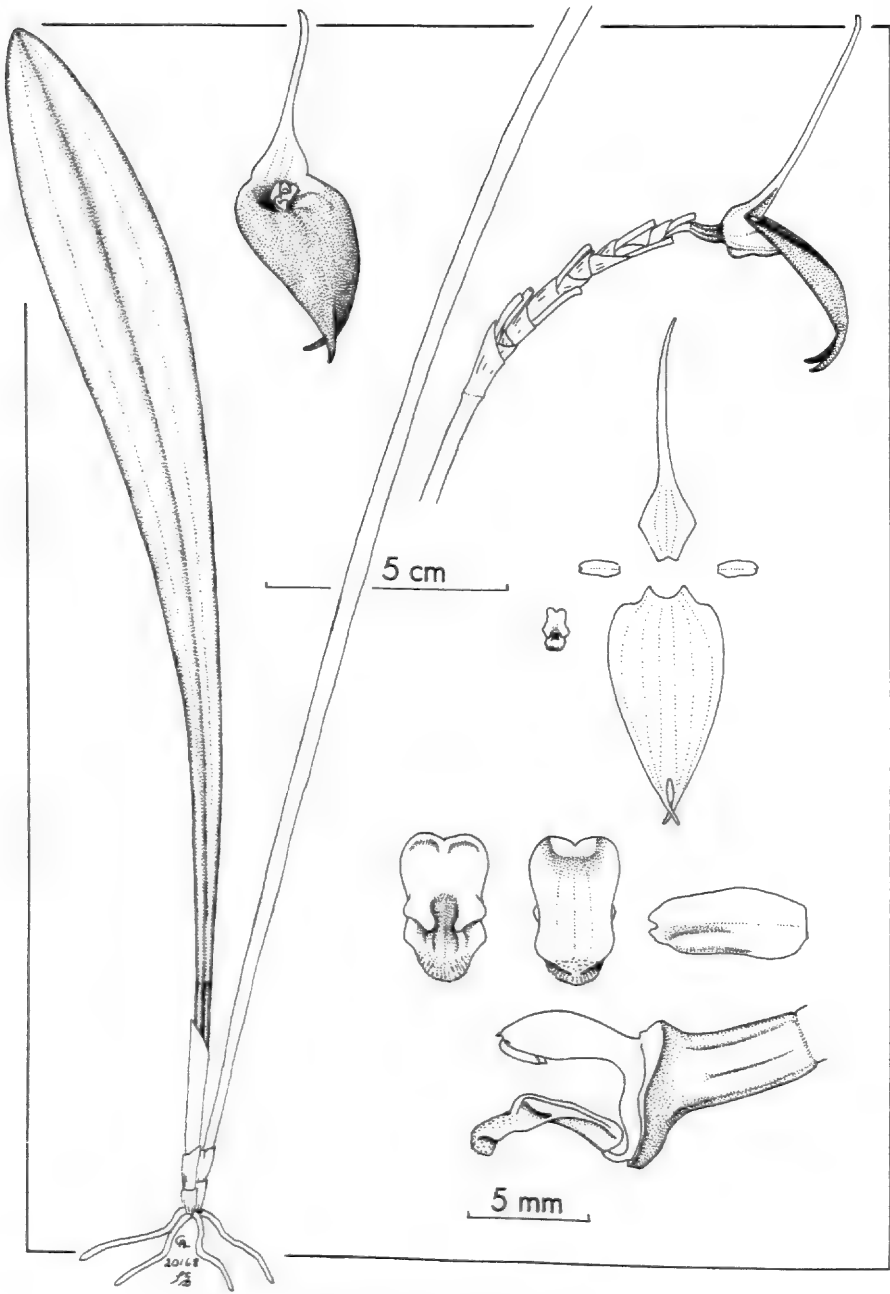


Plate 653. *Masdevallia rolandorum*

Masdevallia trochilus Linden & André, in Lind. Catalogue 1873; et Gard. Chron. 33: 711, 24 May 1873.

Ety.: From the Latin *trochilus*, "a kind of little bird," applied to the hummingbird of the New World (Family Trochilidae), as a translation of the colloquial Indian name for the plant.

Syn.: *Masdevallia ehippium* Rchb.f., Bot. Zeitung (Berlin) 390, 20 June 1873.

Ety.: From the Latin *ehippium*, "a saddle," referring to the shape of the lateral sepals.

Syn.: *Masdevallia colibri* Burbidge, Florist & Pomol. 3, 1873, nomen nudum.

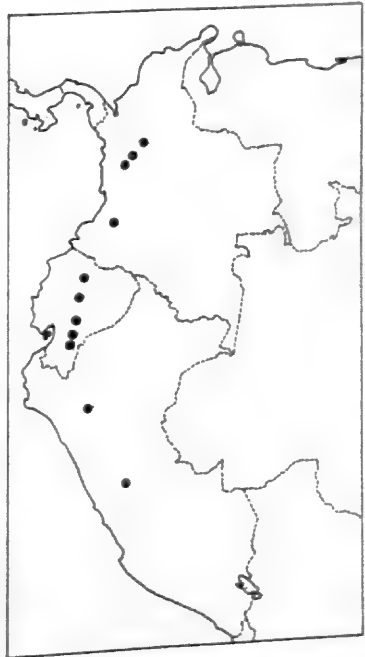
Ety.: From *Colibri*, "a hummingbird," the Indian name for the plant.

Plant large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 3-6 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, thickly coriaceous, 10-22 cm long including the petiole 2-6 cm long, the blade elliptical, obtuse, 2-4 cm wide, narrowly cuneate below into the stout, channeled petiole. **Inflorescence** a subcongested, successively flowered raceme up to 10 cm long, borne by a suberect, stout, triquetrous peduncle 20-35 cm long, up to 0.5 cm broad, with a bract at the base, from low on the ramicaul; floral bracts foliaceous, imbricating, 1.5-3.5 cm long; pedicel 2-4 cm long; ovary 5 mm long; **dorsal sepal** yellow, sometimes suffused with purple, obovate, 18-23 mm long, 8-10 mm wide, connate to the lateral sepals for 5 mm to form a cylindrical sepaline tube, the free portion ovate, subacute to obtuse, contracted into a slender, erect tail 6-9 cm long; **lateral sepals** red-brown to purple-brown, connate 20-25 mm to form a deeply ventricose, ovoid synsepal 25-30 mm long, 20-25 mm wide unexpanded, 15-20 mm deep, with the sides incurved, the veins prominent within and verrucose toward the apices, the apices subacute, approximate, contracted into slender tails 3-6.5 cm long; **petals** white, oblong, 6-7 mm long, 2 mm wide, the apex subacute to tridentate, the labellar half longitudinally callous-thickened; **lip** white, diffusely dotted with purple, oblong-pandurate, 7-7.5 mm long, 2-2.5 mm wide, with prominent, obtuse, lobe-like, marginal folds near the middle, the epichile ovate with the apex minutely verrucose, obtusely apiculate, the hypochile narrowly oblong, the base subcordate, hinged on the end; **column** white with purple margins, semiterete, 5 mm long, the foot stout, 3 mm long, with a short, incurved extension.

COLOMBIA: Antioquia: Sonsón, above Sonsón, 1872, *G. Wallis s.n.* (Holotype: W); same area, alt. 2000 m, 18 Oct. 1884, t. 1472, *F.C. Lehmann 3889* (BM, G, W); "Medellín," *B. Roezl s.n.* (W); "Medellín," alt. 10,000 ft., *Patin s.n.* (K, W); El Retiro, Hda. Normandía, alt. 2500 m, 2 Dec. 1956, *M. Ospina-Hernández 77* (AMES, COL); Abriaquí, Río Herradura, alt. 2200 m, 13 May 1983, *R. Escobar & E. Valencia 2581* (SEL); Urrao, Río Pabón, alt. 2100 m, 28 Apr. 1977, collected by E. Segura, cultivated at La Estrella by O. Arango, 6 Oct. 1977, *C. Luer 1938* (SEL); Urrao, Quebradona, collected by E. Valencia, Oct. 1986, cultivated at Colomborquídeas, 17 Apr. 1988, *C. Luer 13227* (MO). **Cauca:** Buenaventura, 1877, *Klaboch s.n.* (W); forests above Popayán, alt. 1750-2000 m, 23 Feb. 1884, *F.C. Lehmann 3538* (AMES, B, BM, BR, G, K, LE, US, W).

ECUADOR: Napo: near Río Quijos, alt. 2100 m, collected by A. Andreetta, cultivated in Cuenca, 13 July 1977, *C. Luer 1693* (SEL); Cotundo, alt. 2000 m, July 1984, *A. Hirtz 1829* (MO). **Pastaza:** Río Negro, alt. 1300 m, 15 July 1983, *A. Hirtz 1039* (SEL). **Morona-Santiago:** below Sigsig, alt. 1700-2000 m, May 1877, *F.C. Lehmann 6529* (K); above Bomboiza, alt. 1500 m, collected by A. Andreetta, cultivated in Cuenca, 1 Nov. 1982, *C. Luer 2322E* (SEL). **Loja:** "Loja," cultivated by Sander 1883, collected by *G. Hübsch s.n.* (W); without collection data, cultivated 1881 by *James O'Brien s.n.* (W); Río Yambala above Vilcabamba, alt. 2400 m, Mar. 1982, *D. D'Alessandro s.n.* (SEL). **Zamora-Chinchi:** between Loja and Zamora, alt. 1700 m, June 1958, *C.H. Dodson 244* (MO, SEL); between Loja and Zamora, alt. 2250 m, 22 May 1988, *C. Luer, A. Hirtz, W. Flores, A. Andreetta & W. Teague 13592* (MO).

PERU: Amazonas: Molinopampa, alt. 2300 m, 1983, *W. König, H. König & M. Arias K-81e* (MO). **Herb. H. König:** *Junín:* Chanchamayo, collected by J. Meza, cultivated by B. Würstle at Spielberg, Germany, 1 June 1980, *C. Luer 5299* (SEL).



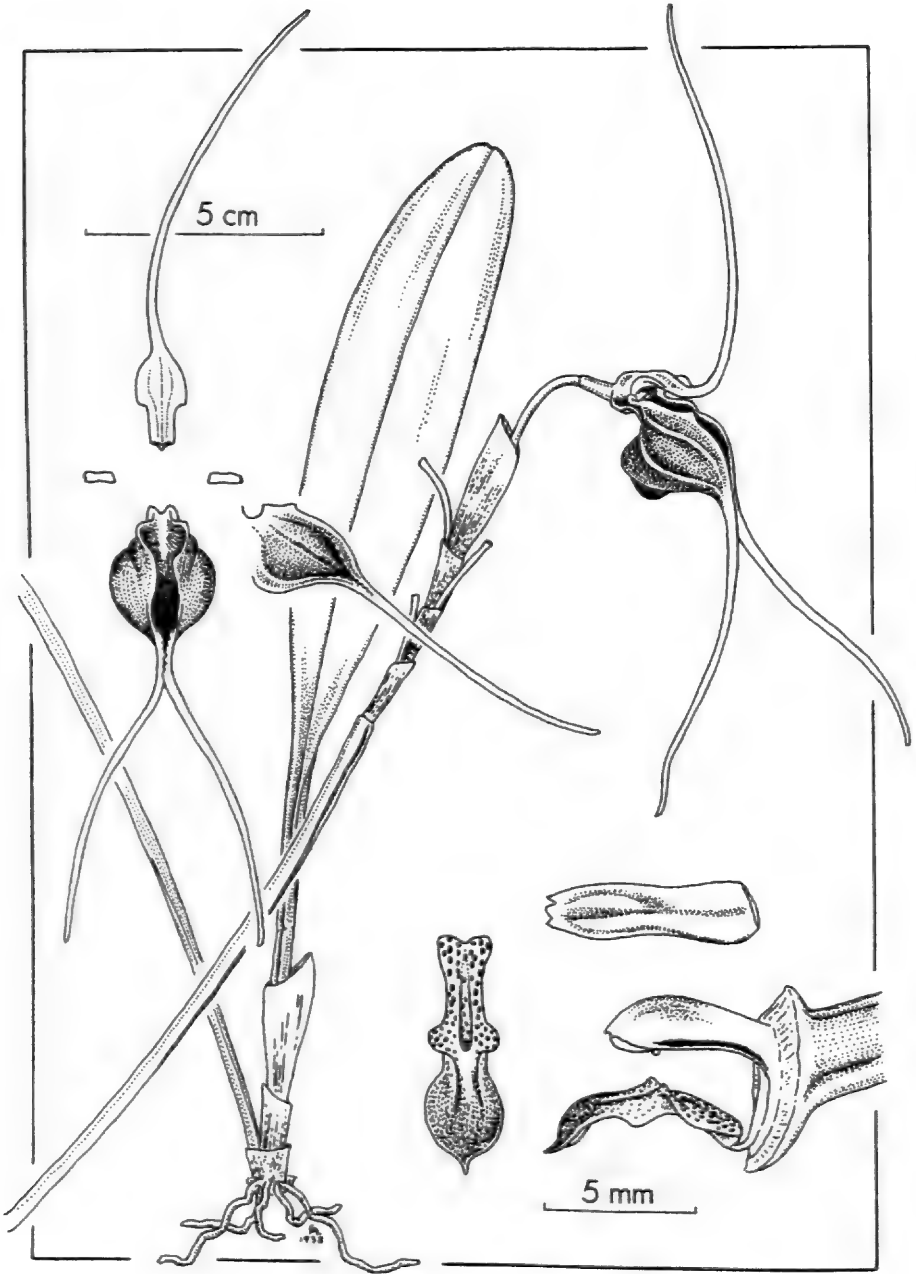


Plate 98. *Masdevallia trochilus*

Gustav Wallis first discovered this well-known species in 1868 in the mountains above Sonsón in the Colombian department of Antioquia. It was very scantily described in Linden and André's sales catalogue in the spring of 1873, and quoted in the weekly *Gardeners' Chronicle*, only a few weeks before Reichenbach's Latin description was published with the name *M. ephippium*. This large species is widely distributed from central Colombia to central Peru.

In his *Xenia Orchidaceae* of 1874, Reichenbach published an account of *M. ephippium*, and on the same page he described as *M. acrochordonia* the plant collected in Ecuador by Dr. Krause. He distinguished the latter for smaller flowers with narrower, less involute sepals. The synsepal of *M. plynophora* from northern Peru is larger and widely expanded without incurved margins.

Masdevallia trochilus is characterized by the large habit with thickly coriaceous leaves and a stout, considerably longer peduncle. The raceme produces a large flower on a long pedicel successively over a long period of time, often over one year. The sepals are connate into a proportionately short, cylindrical tube. The blade of the dorsal sepal is held forward, and the long, slender tail reflects abruptly. The lateral sepals are deeply connate into a concave synsepal that is deeply inflated above the middle. The sides are involute, creating an egg-shaped synsepal with the interior hidden. The petals are variously dentate and callous along the lower half. The lip is pandurate with wing-like folds near the middle.

Masdevallia anomala Luer & Sijm, sp. nov.

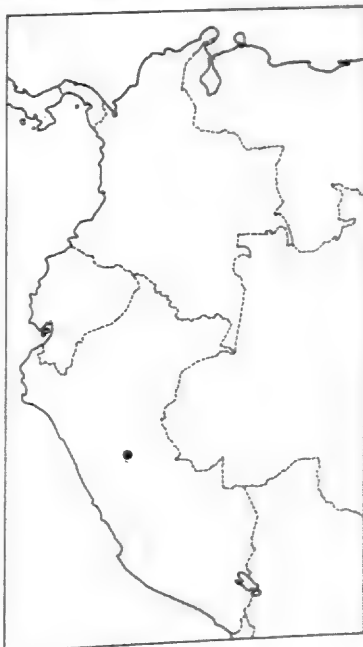
Ety.: From the Latin *anomalus*, "deviating from the usual," referring to the combination of morphological features.

Planta mediocris, pedunculo tereti unifloro, sepalorum caudibus supra medium encrassatis, petalis oblongis subcallosis, et labello illis subgen. *Polyanthae* similis.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls stout, blackish, erect, ca. 1 cm long, enclosed by a loose, tubular sheath and another at the base. **Leaf** erect, thickly coriaceous, 9 cm long including a black petiole ca. 2.5 cm long, the blade narrowly elliptical, subacute, 1.2 cm wide, gradually narrowed below into the petiole. **Inflorescence** a single flower, borne by an erect or suberect, terete peduncle, 9 cm long, with a bract near the base, from low on the ramicaul; floral bract tubular, oblique, 13 mm long; pedicel 7 mm long; ovary 8-9 mm long; **sepals** color?, glabrous, the dorsal sepal obovate, 17 mm long, 11 mm wide, 3-veined, connate to the lateral sepals for 10 mm to form a cylindrical tube, the free portion broadly triangular, subacute, contracted into a forwardly directed, slender tail, thickened toward the apex, 15 mm long, the lateral sepals oblong, 20 mm long, 10 mm wide, 3-veined, connate 7 mm, the free portions triangular, acute, contracted into slender tails similar to that of the dorsal sepal; **petals** white, oblong, 7.5 mm long, 3.5 mm wide, the apex obtuse-subtruncate, minutely short-apiculate, with a low, longitudinal, callus along the lower margin above the lower third, and with an indistinct callus within the upper margin; **lip** oblong, 10.5 mm long, 4.5 mm wide, with a pair of longitudinal carinae from low folds near the middle, the epichile oblong, with the sides narrowly revolute, the margins of the apex fimbriate tip, the hypochile oblong, shallowly concave between suberect, rounded, basal angles or lobes, the base subtruncate, cleft, thickened and hinged beneath; **column** stout, semiterete, 8 mm long, the foot equally long with a distinct, incurved extension.

PERU: **Huánuco**: near Tingo Maria, alt. ca. 1500 m, 1993, A.P. Sijm et al. s.n. (Holotype: MO), C. Luer illustr. 20170.

This species, a recent collection in central Peru by Ton Sijm, exhibits an unusual combination of physical features. The narrow, coriaceous leaf is borne by a black stem, not unusual among many subdivisions of the genus. The single-flowered peduncle is terete and as long as the leaf. The flower is typical of section *Polyanthae* with callous but "toothless" petals, and a lip with marginal folds near the middle, and with fimbriate margins above the middle. The peduncle and petals also suggest section *Reichenbachiana*, a Central American taxon with a member in adjacent Colombia. It is superficially similar to some members of section *Coriaceae*.



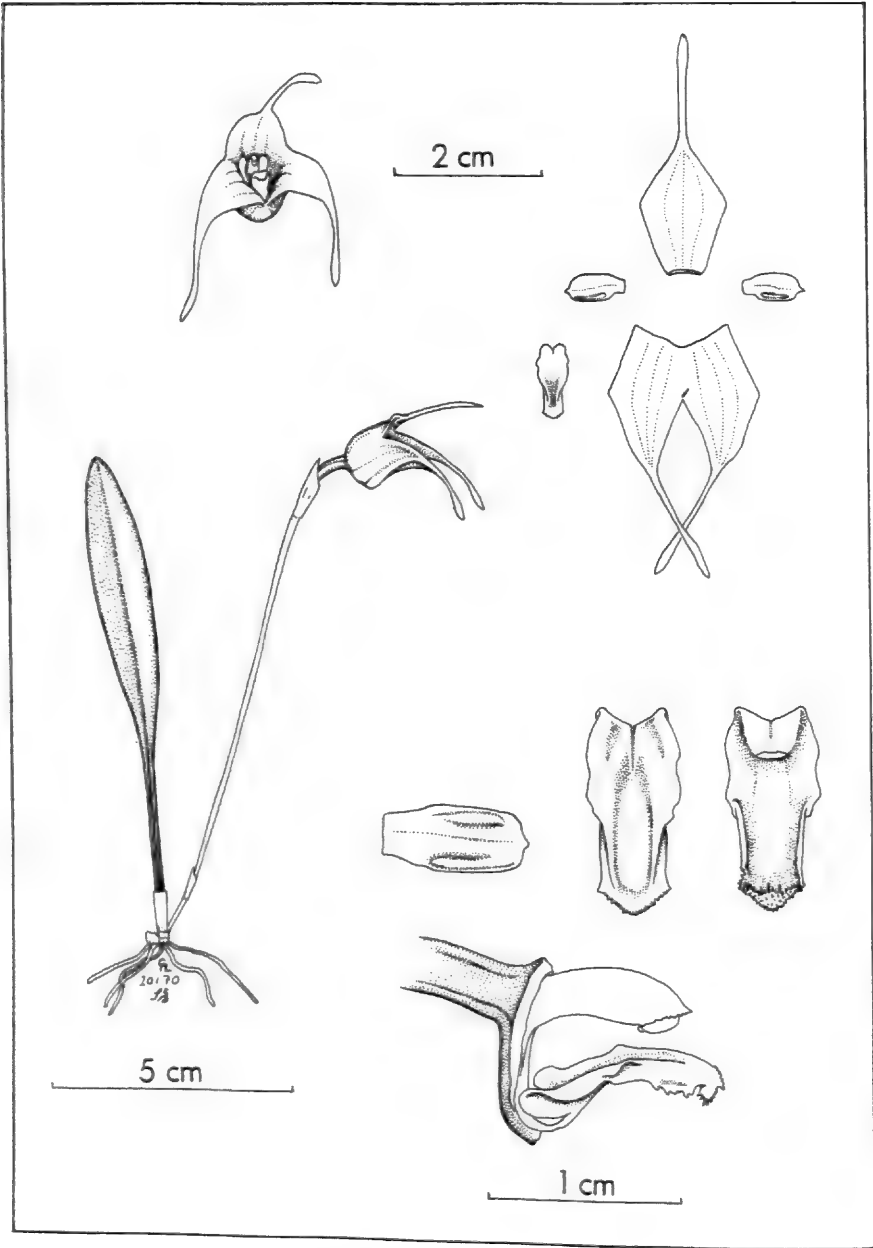


Plate 654. *Masdevallia anomala*

Masdevallia eburnea Luer & Maduro, sp. nov.

Ety.: From the Latin *eburneus*, "of ivory," referring to the sepals.

Species haec *M. marginellae* Rchb.f. affinis, sed pedunculo longiore, floribus majoribus successivis, sepalis nitentibus pallidis roseo striatis et sepalis lateralibus latioribus caulibus recurvis differt.

Plant medium in size, epiphytic, caespitose; roots fleshy. Ramicauls slender, erect, 2 cm long, enclosed by 2 loose, tubular sheaths. **Leaf** erect, coriaceous, narrowly elliptical-obovate, obtuse, 12-14 cm long, 2.5 cm wide, gradually narrowed below into a petiole 3-4 cm long. **Inflorescence** a rapidly successive or nearly simultaneous, few-flowered raceme, the rachis ca. 1.5 cm between flowers, borne by a slender peduncle, round in cross section, 11-13 cm long, with a bract at the base, from low on the ramicaul; floral bracts oblique, 12 mm long; pedicels 15 mm long; ovary 10 mm long; **sepals** fleshy, glabrous, shiny, ivory to light yellow-green, streaked with rose, the dorsal sepal oblong-obovate, 25 mm long, 11 mm wide, 3-veined, connate to the lateral sepals for 20 mm to form a funnel-shaped, sepaline tube, the free portion broadly triangular, obtuse, contracted into an erect, stout, yellow-green tail ca. 4 cm long, the lateral sepals connate 20 mm into an obovate, arcuate synsepal, 25 mm long, 26 mm wide, 6-veined, convex centrally, with the apices obtuse, in near proximity, contracted into reflexed tails ca. 3 cm long; **petals** white, cartilagenous, ovate, 7.5 mm long, 3.5-4 mm wide, the apex obscurely lobed, the labellar half with a low, callus along the margin, ending in an obtuse angle between the basal and middle thirds; **lip** broadly oblong, 9 mm long, 4 mm wide, with a pair of low, longitudinal calli, obtusely angled near the middle, the apex rounded, minutely erose, the base subtruncate-cordate, shallowly cleft, hinged beneath; **column** semiterete, 6 mm long, the foot 5 mm long with a thick, incurved extension.

PANAMA: Chiriquí: alt. 1900-2000 m, collected by Erick Olmos, spring 2000, cultivated at Finca Dracula, Cerro Punta, spring 2001, *E. Olmos 157* (Holotype: MO), C. Luer illustr 19926; cultivated in Highland Park, IL, Dec. 2002, by *J. Dixler s.n.* (MO).

This species of section *Reichenbachiana* from western Panama is most similar to the Costa Rican *M. marginella*. The sepals of the Panamanian *M. eburnea* are more deeply connate into a much broader tube. Although the sepaline tails of the simultaneously two-flowered *M. marginella* are sometimes more or less curved, the tails of the lateral sepals of *M. erickii* are curved 180°.

Masdevallia eburnea is characterized by a slender peduncle, nearly as long as the leaf, that bears in rapid succession a loose, few-flowered raceme, sometimes with two flowers open simultaneously. The flowers are shiny, pale yellow-green, streaked with rose, and produced about a centimeter and a half apart.



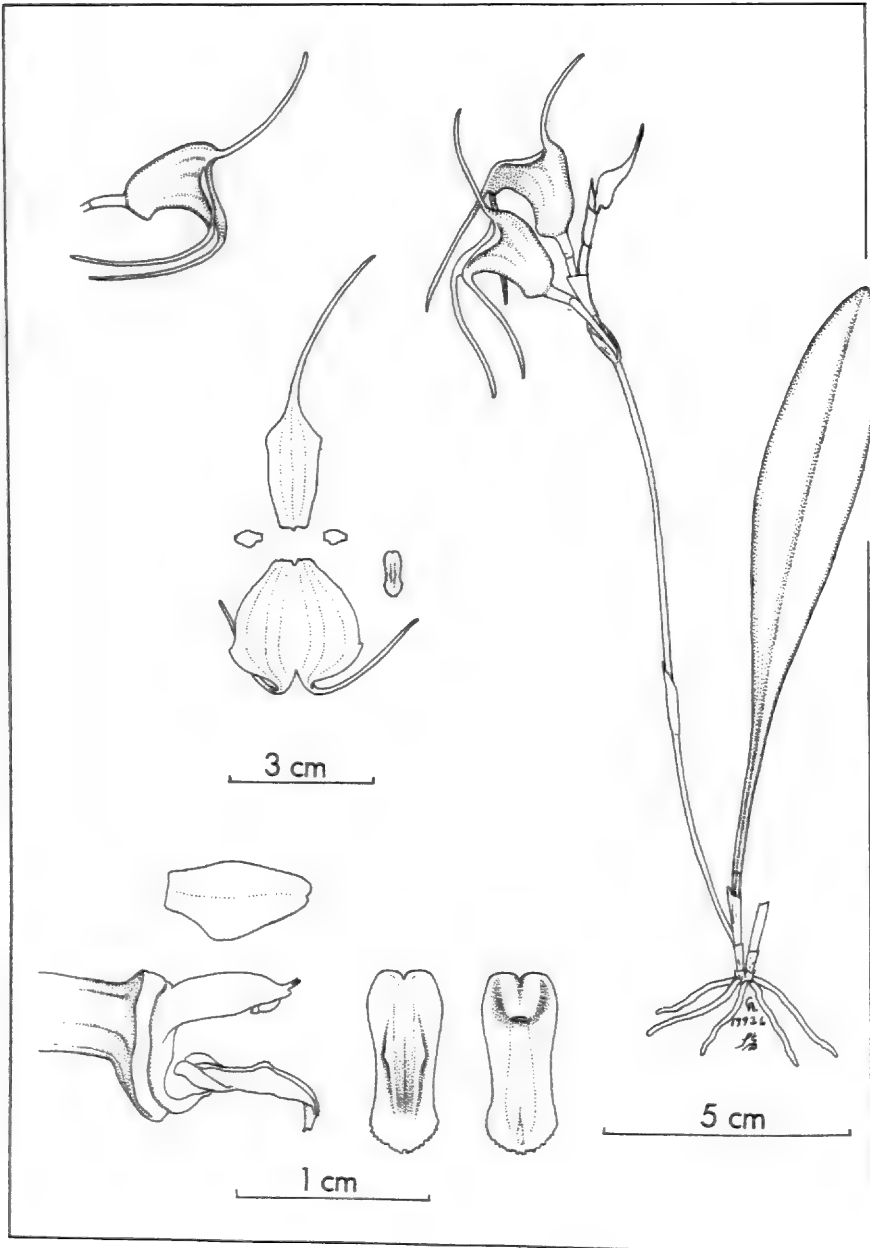


Plate 655. *Masdevallia eburnea*

Masdevallia gloriae Luer & Maduro, sp. nov.

Ety.: Named for Gloria Herrera de Maduro of Panama, Panama, wife of Andres Maduro, co-collector of this species.

Planta parva, pedunculo tereti unifloro, sepalorum caudibus crassissimus, petalis illis sect. *Coriaceae* similibus, et labello illis subgen. *Polyanthae* similis.

Plant small in size, epiphytic, caespitose; roots fleshy. Ramicauls stout, erect, 1-1.3 cm long, enclosed by 2 loose, tubular sheaths. **Leaf** erect, thickly coriaceous, 4-7 cm long including a petiole 1-1.5 cm long, the blade narrowly elliptical-obovate, subacute to obtuse, 1.4-1.8 cm wide, gradually narrowed below into the petiole. **Inflorescence** a single flower, borne by an erect or suberect, terete peduncle, 3-4.5 cm long, with a bract at the base, from low on the ramicaul; floral bract loose, tubular, oblique, 8-10 mm long; pedicel 9-14 mm long; ovary 4 mm long; **sepals** white, glabrous, the dorsal sepal obovate, 12 mm long, 6 mm wide, 3-veined, connate to the lateral sepals for 8 mm to form a cylindrical tube, the free portion broadly triangular, subacute, contracted into an erect or forward, stout, yellow tail 15-21 mm long, 2 mm thick, the lateral sepals oblong-obovate, 11 mm long, 3-veined, connate 5 mm into a lamina 12 mm wide, the apices subacute, contracted into thick tails similar to that of the dorsal sepal; **petals** white, oblong, slightly broader below the middle, 5 mm long, 2 mm wide, the apex obtuse, minutely apiculate, the labellar half with a low, longitudinal callus above the margin; **lip** subpanduriform, 5 mm long, 2.4 mm wide at the base, with a pair of longitudinal carinae that form obtuse, marginal folds at an isthmus above the middle, the epichile glabrous, ovate, obtuse, callous beneath the tip, the hypochile oblong, shallowly concave between the longitudinal carinae, with the margins thin, the base truncate and reflexed, with a pair of calli flanking a shallow, central cleft, hinged beneath; **column** semiterete, 4 mm long, the foot 2 mm long with a distinct, incurved extension.

PANAMA: **Chiriquí**: Cerro Punta, Guadalupe, alt. 2000 m, collected by A. Maduro and E. Olmos, cultivated at Finca Dracula at Cerro Punta, A. Maduro s.n. (Holotype: MO), C. Luer illustr. 20192.

This species, recently found on a cold, humid mountainside in western Panama, is a member of section *Reichenbachianae*, joining *M. chasei* and *M. walteri* in possessing a pair of folds above the middle of the lip. It is characterized by a single-flowered terete peduncle that is shorter than thickly elliptical, obtuse leaves. The flowers are tubular and white with thick, yellow tails. The sepals are callous above the lower margin, as seen in sections *Coriaceae* and *Reichenbachianae*, and subgenus *Polyanthae*. The lip is pandurate with a pair of longitudinal calli that form oblique angles above the middle, as seen in all members of subgenus *Polyanthae*, but uncommonly to lesser degrees in other taxa. The base of the lip is unique. The reflexed basal segment is well defined with a pair of short, oblique calli flanking a shallowly cleft center.



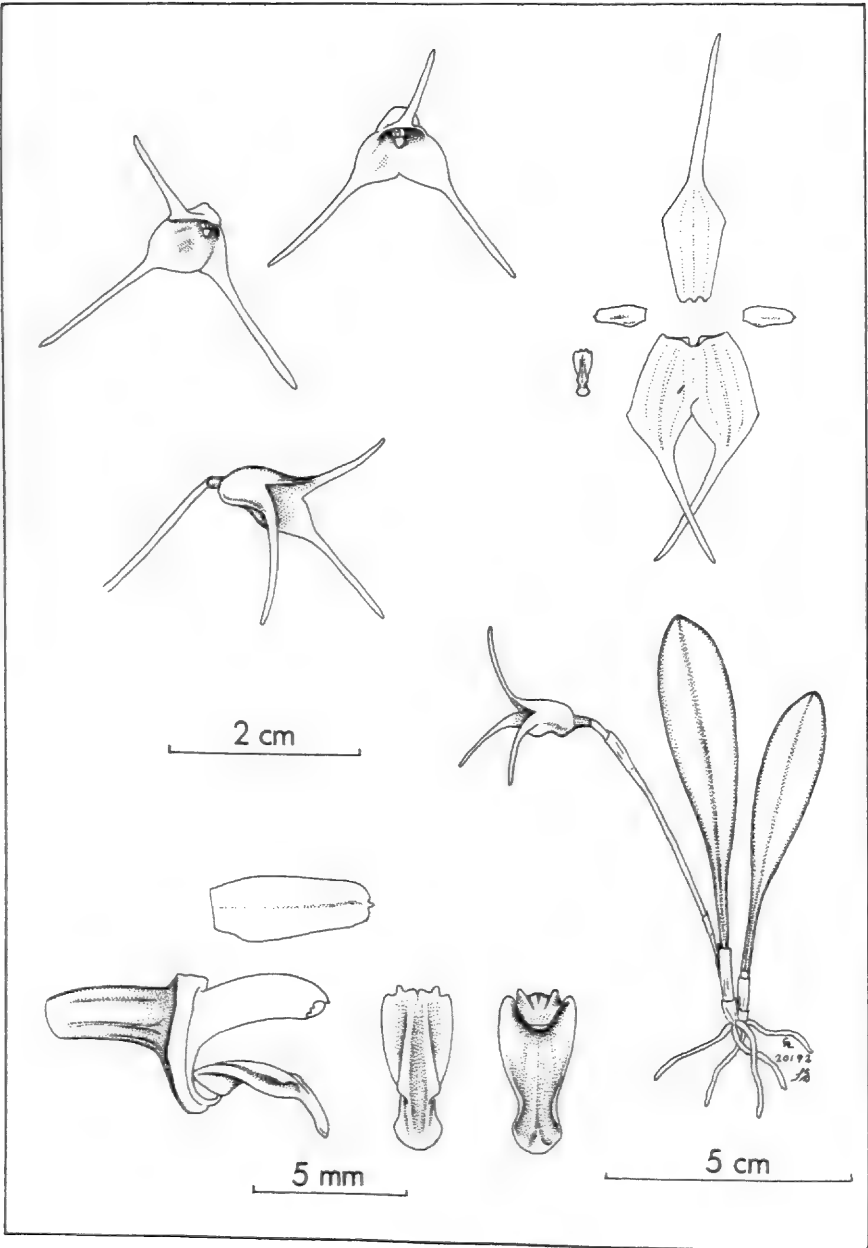


Plate 656. *Masdevallia gloriae*

Masdevallia strumosa P.Ortiz & E.Calderón, *Orquideología* 22: 120, 2002.

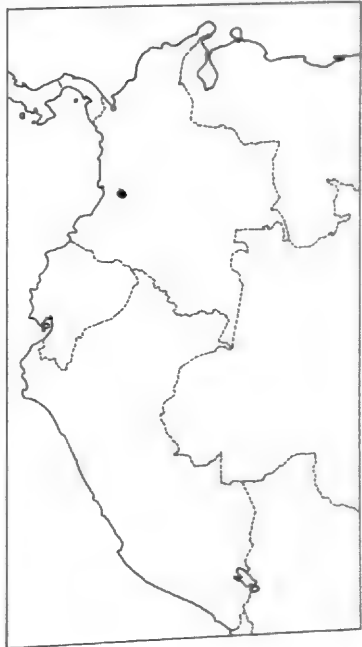
Ety.: From the Latin *strumosus*, "with a swelling," referring to the prominent chin.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls blackish, slender, erect, 3 cm long, enclosed by 2 loose, tubular sheaths. **Leaf** erect, coriaceous, 8-12 cm long including a petiole ca. 3 cm long, the blade narrowly elliptical, subacute to acute, 1.4-1.6 cm wide, gradually narrowed below into the petiole. **Inflorescence** a single flower, borne by a slender, erect peduncle, ca. 6-8 cm long, with a bract at the base, from low on the ramicaul; floral bract tubular, 8 mm long; pedicel 10 mm long; ovary 4 mm long; **sepals** white, yellowish toward the base, glabrous, the dorsal sepal obovate, 14 mm long, 7 mm wide, 3-veined, with a purple stripe below the middle, connate to the lateral sepals for 8 mm to form a cylindrical tube, the free portion triangular, subacute, contracted into an erect, slender, yellow tail 4.7 cm long, the lateral sepals oblong, oblique, 15 mm long, 7 mm wide, 3-veined, each with 2 purple stripes below the middle, arcuate and connate 5.5 mm, the apices obtuse, contracted into slender tails similar to that of the dorsal sepal; **petals** white, oblong, oblique, 6 mm long, 3.5 mm wide, the apex obtuse, shallowly bilobulate, subapiculate, the base contracted into a distinct claw, the labellar margin with a longitudinal callus below the middle ending in a short, obtusely angled process; **lip** yellow, oblong-subpandurate, 7 mm long unexpanded, 3 mm wide, channeled centrally, slightly constricted below the dilated apex, the apex broadly rounded, acutely deflexed, minutely erose, the base narrowed, cordate, hinged beneath; **column** semiterete, 6 mm long, the foot 6 mm long with a short, incurved extension.

COLOMBIA: **Valle del Cauca**: Cordillera Occidental, Cali, Los Farallones, cuenca del Río Pance, Filo de Hambre, "Mirador del Ilex," alt. 3190 m, 25 Mar. 1998, *E. Calderón 110C* (Holotype: FMB); same collection, *E. Calderón 110A, 110B, 110D* (Paratypes: COL, JAUM, MO, TULV), C. Luer illustr. 20430.

This species of subsection *Masdevallia*, apparently endemic in southern Colombia, is closely related to the relatively frequent and widely distributed *M. strumifera*. Both are characterized by the "goiter," a prominent, elongated mentum.

Masdevallia strumosa is distinguished by white sepals with a prominent purple stripe on the dorsal sepal and a pair of stripes on each of the laterals. The petals are proportionately large, obliquely oblong, and shortly unguiculate. The apex of the lip is widened with the rounded tip sharply deflexed 90°.



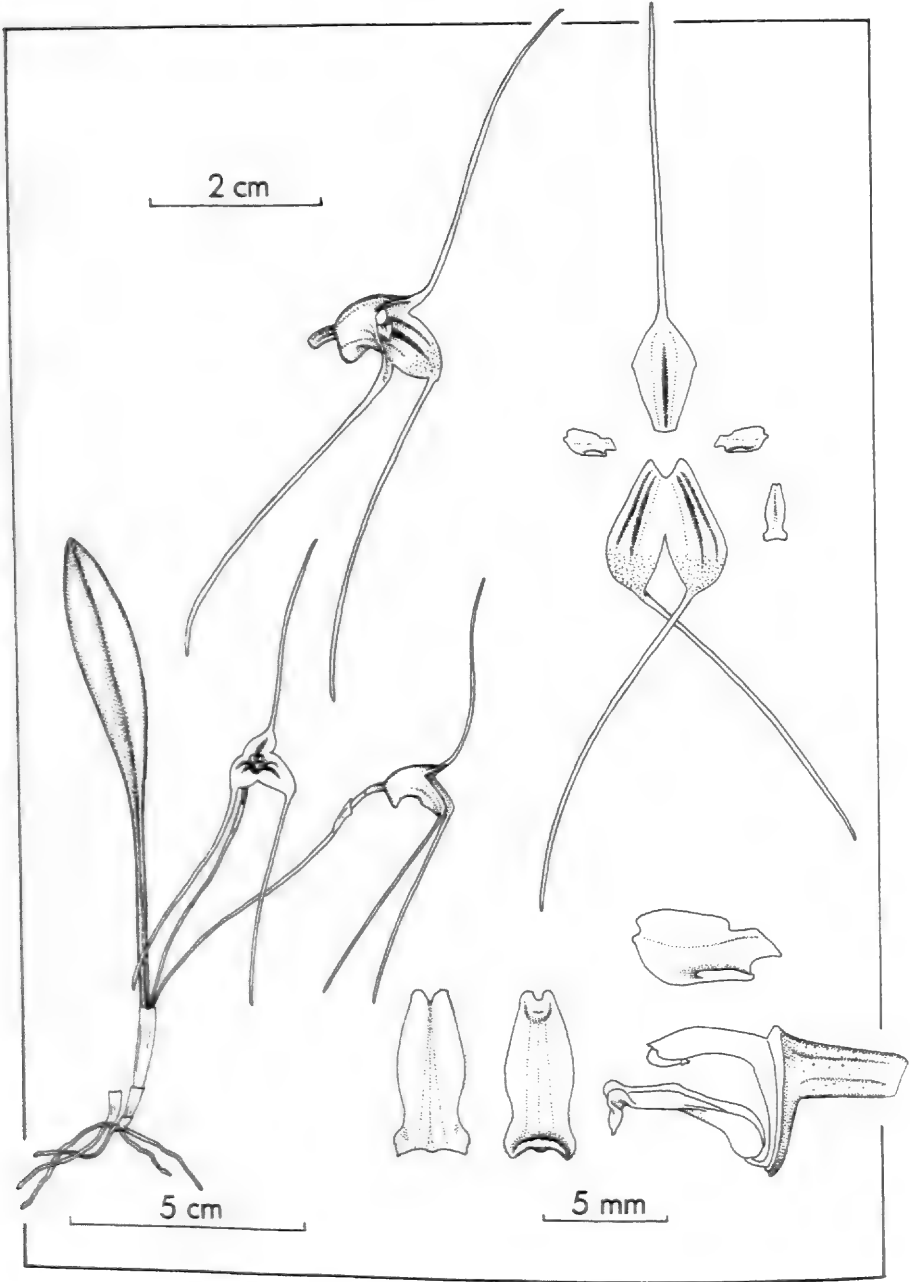


Plate 657. *Masdevallia strumosa*

Masdevallia acaroi Luer & Hirtz, sp. nov.

Ety.: Named for Acaro Medina of Gualaceo, Ecuador, collector of numerous new species cultivated at Ecuagenera in Gualaceo.

Species haec *M. rufescenti* Königer affinis, sed sepalis intense rubropunctatis, caudis longioribus et labello ovato marginibus undulatis differt.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1 cm long, enclosed by 2 loose, tubular sheaths. **Leaf** erect, coriaceous, 5 cm long including a petiole 1.5 cm long, the blade narrowly elliptical, subacute to obtuse, 1.4 cm wide, gradually narrowed below into the petiole. **Inflor-escence** a single flower, borne by a more or less horizontal peduncle, 3.5 cm long, with a bract at the base, from low on the ramicaul; floral bract tubular, 8 mm long; pedicel 12 mm long; ovary 5 mm long; **sepals** rose, intensely and diffusely dotted with red, glabrous but microscopically cellular with minutely irregular margins, the dorsal sepal suborbicular, concave, anteflexed, 11 mm long, 9 mm wide, 3-veined, connate to the lateral sepals for 5 mm to form a subglobose cup, the free portion rounded, contracted into an erect or slightly reflexed, slender, purplish tail 4 cm long, the lateral sepals elliptical, 16 mm long, 9.5 mm wide, 3-veined, connate 4 mm, the apices obtuse, contracted into slender tails similar to that of the dorsal sepal; **petals** rose, oblong, 5 mm long, 2 mm wide, the apex obtuse, shallowly bilobulate, the labellar margin with a longitudinal callus ending in a short, thick, retrorse process; **lip** rose with the tip purple, ovate, 4.5 mm long, 3 mm wide, with a pair of low, longitudinal carinae on the middle third, the apex obtuse, convex with a thick, midline callus, with the margins thin, undulating, the base rounded, delicately hinged beneath; **column** semiterete, 5 mm long, the foot 2 mm long with an incurved extension.

ECUADOR: **Zamora-Chinchi**: Cordillera del Condor, Chinapintza, alt. 1700 m, collected by A. Medina, cultivated at Ecuagenera, Gualaceo, Ecuador, 11 July 2002, A. Hirtz 8400 (Holotype: MO), C. Luer illustr. 20196.

This species of subsection *Caudatae* from the Cordillera del Condor is characterized by a rose flower diffusely and densely dotted with red. The concave dorsal sepal is held forward over broadly expanded lateral sepals. The tails are long and slender. The petals are oblong with a short basal process; the lip is ovate with thin, undulating margins.



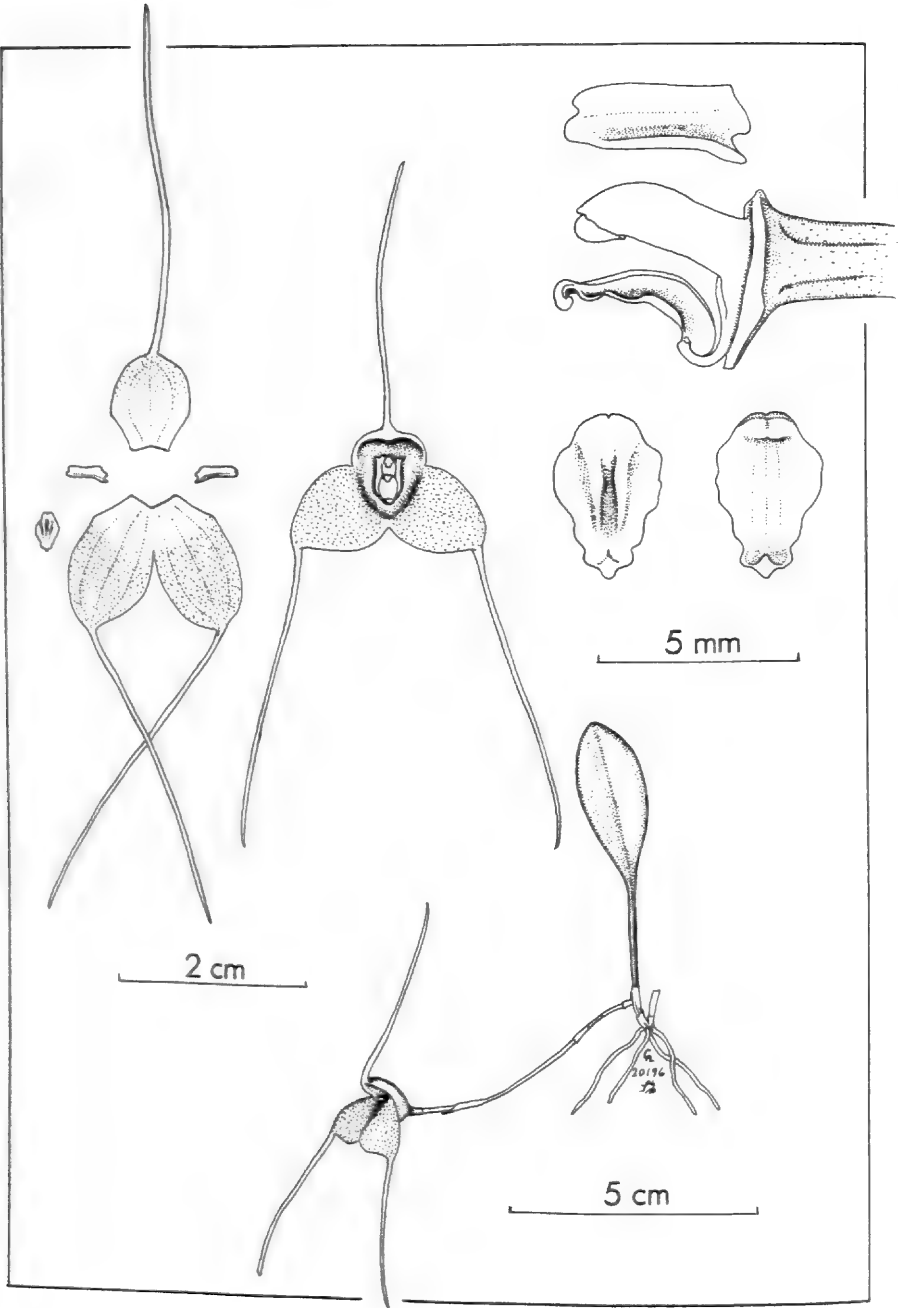


Plate 658. *Masdevallia acaroi*

Masdevallia stigii Luer & Jost, sp. nov.

Ety.: Named for Stig Dalström of Sarasota, Florida, who discovered this species.

Inter species subsectionis *Caudatae*, foliis late ellipticis obtusis petiolatis quam pedunculo longioribus, sepalis lateralibus latissime latis purpureo punctatis cum callo elliptico ad basim, petalis obtuse callosis, et labello oblongo leviter bicalloso distinguitur.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1 cm long, enclosed by 2 loose, tubular sheaths. **Leaf** erect, coriaceous, 3.5–4.5 cm long including a petiole ca. 1 cm long, the blade elliptical to broadly elliptical, obtuse to rounded at the apex, 1.5–2 cm wide, cuneate below into the petiole. **Inflorescence** a single flower, borne by a slender, more or less horizontal or suberect peduncle, 3.5 cm long, with a bract at the base, from low on the ramicaul; floral bract tubular, 9 mm long; pedicel 13 mm long; ovary 5–6 mm long; **sepals** thin, glabrous, the dorsal sepal pale rose, suffused with darker rose, intensely dotted with purple-brown, suborbicular, concave, 11 mm long, 11 mm wide, incompletely 5-veined, connate to the lateral sepals for 7 mm to form a gaping cup, the free portion rounded, contracted into an erect, slender tail 2 cm long, the lateral sepals widely expanded, pale rose, intensely dotted with brown below the middle, faintly dotted above the middle, with a dark purple-black, ovate callus at the base, ovate, obtuse, oblique, 15 mm long, 12 mm wide, 3-veined, connate 5 mm, the apices obtuse, oblique, contracted into slender tails 2.5 cm long; **petals** white, thick, oblong, 5 mm long, 2 mm wide, the apex obtuse, shallowly lobulate, the labellar margin with a longitudinal callus ending in a short, thick, retrorse process above the base; **lip** rose with the tip purple, oblong, 4 mm long, 2.25 mm wide, with a pair of low, longitudinal carinae above the middle, the apex round with a thick, midline callus, the base retuse, delicately hinged beneath; **column** semiterete, 4 mm long, the foot 2 mm long with an incurved extension.

ECUADOR: **Pastaza**: forested ridge north of Mera, alt. 1500 m, collected by Stig Dalström and Louis Jost, Mar. 2001, cultivated in Quito by L. Jost 2960 (Holotype: QCA; Isotype: MO); same collection, cultivated in Wilmington, DE, Aug. 2002, by M. Rao 97 (MO), C. Luer illustr. 20191.

This species of subsection *Caudatae* has recently been discovered in an area that has been botanized for a century and a half. It is characterized by a showy flower with a concave, rose dorsal sepal and broad, widely expanded lateral sepals that are diffusely dotted with red-purple, intensely below the middle and faintly above the middle. At the base of each lateral sepal within there is a deep purple elliptical callus. The callus of the petals ends in a short, thick process. The lip is oblong with a pair of calli above the middle.



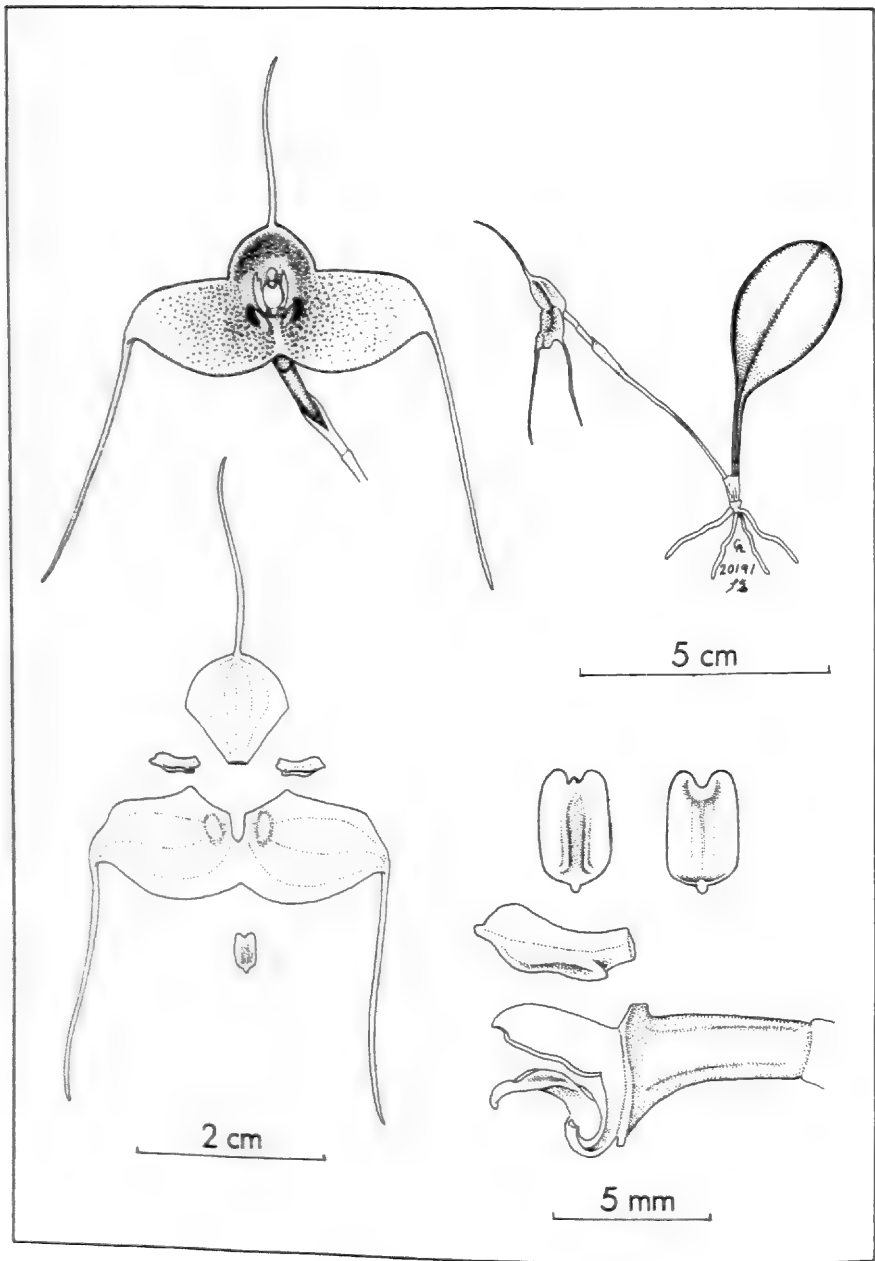


Plate 659. *Masdevallia stigi*

Masdevallia saltatrix Rchb.f., *Linnaea* 41: 10, 1877.

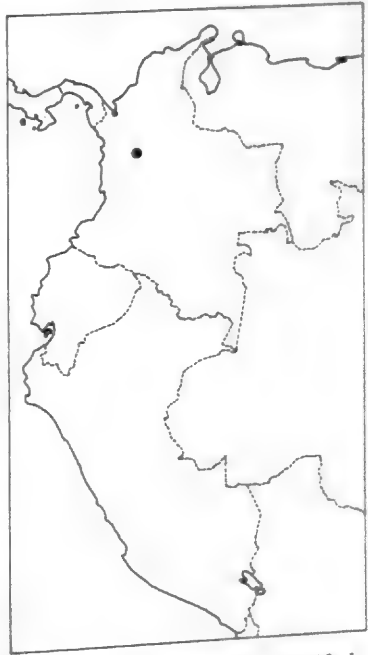
Ety.: From the Latin *saltatrix*, "a woman dancer," in allusion to the graceful flower.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1-2 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, 4-11 cm long including the petiole 1-4 cm long, the blade elliptical, obtuse, 1.2-2.3 cm wide, cuneate below into the slender petiole. **Inflorescence** a solitary flower borne by a slender, erect to suberect peduncle 2-6 cm long, with a bract near the base, from low on the ramicaul; floral bract tubular, 7-8 mm long; pedicel 12-13 mm long; ovary 6 mm long; **sepals** glossy red-purple externally, yellow, dotted with red and cellular-pubescent within, the dorsal sepal oblong, 27 mm long, 10 mm wide, connate to the lateral sepals for 23 mm to form an erect, curved, ventricose, cylindrical tube constricted below the ostium, the free portion transversely triangular, the obtuse apex contracted into a slender, recurved tail 17-25 mm long, with an orange, clavate apex, the lateral sepals 25 mm long, connate 20 mm into an oblong, deeply ventricose synsepal, 18 mm wide expanded, the free portions obtuse, contracted into reflexed tails similar to that of the dorsal sepal; **petals** white, elliptical-oblong, 6 mm long, 2.5 mm wide, the subacute apex obscurely bilobed, the lower margin with a longitudinal callus ending in an obtuse angle above the base; **lip** bright yellow, flecked with purple below the middle, oblong-ligulate, 6 mm long, 2.25 mm wide, the apex subacute, the disc with a pair of low, parallel calli, the base truncate, hinged on the end; **column** white, semiterete, 5.5 mm long, the foot stout, 2 mm long with a short, incurved extension.

COLOMBIA: **Antioquia**: Frontino, *Roezl s.n.* (Holotype: W); Cerro de Frontino, alt. 2000 m, 25 Oct. 1884, *F. C. Lehmann 4137* (G, K); El Plateado, collected by R. Escobar et al., 11 Apr. 1974, cultivated by M. & O. Robledo, 4 Oct. 1977, *C. Luer 1902* (SEL); same area, alt. 1820 m, 3 May 1983, *C. Luer, J. Luer, R. Escobar, A. Pridgeon & E. Valencia 9051* (SEL).

This species is endemic in the region around Frontino in the Western Cordillera of Colombia, where it was first collected by Roezl. Lehmann also found it there when he visited the silver mines at El Plateado. He entitled his painting of this species, now at Kew, *Masdevallia ventricularia* var. *frontinoënsis*.

Closely allied to the smaller, short-tailed, Ecuadorian *M. ventricularia*, and even more closely allied to the slender-tailed *M. filaria* that is also found in the Western Cordillera, this taxon is easily recognized. The larger, erect, dark red, glossy, big-bellied sepaline tube, yellow and spotted inside, and the three reflexed, slightly clavate tails easily identify it. The petals are oblong with a marginal callus, and the simple lip is oblong and obtuse.



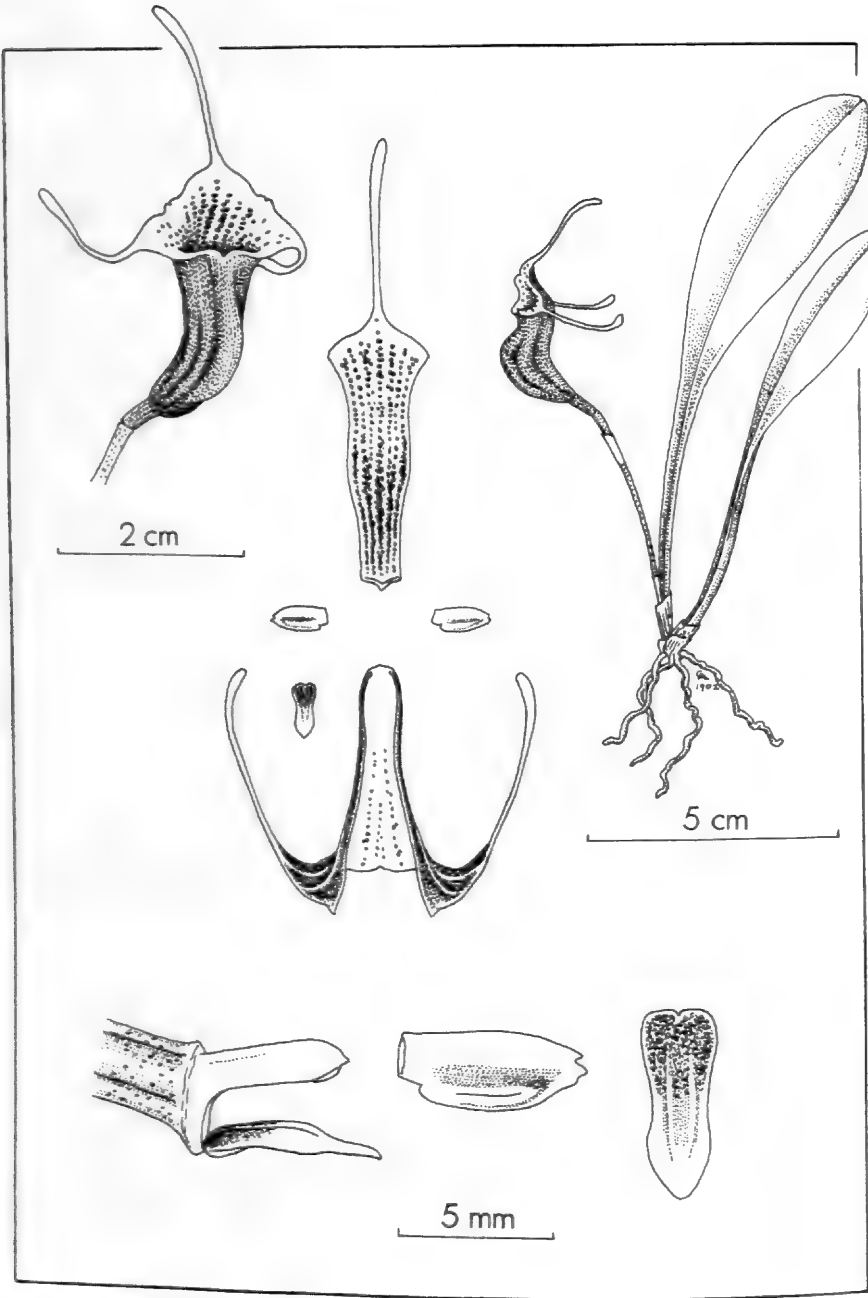


Plate 527. *Masdevallia saltatrix*

Masdevallia ventricularia Rchb.f., *Otia Bot. Hamburgensia* 1: 14, 1878.

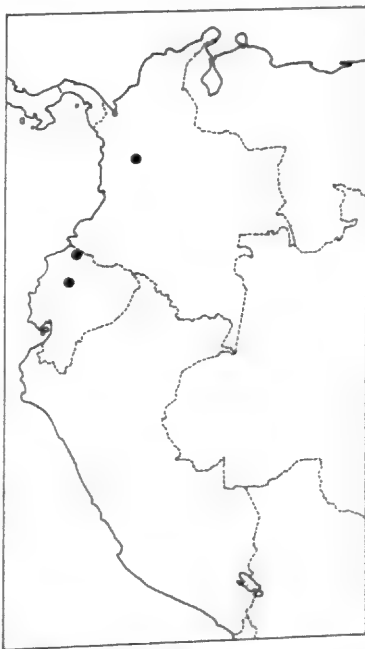
Ety.: From the Latin *ventriculus*, "a little belly," referring to the anterior bulging of the sepaline tube.

Syn.: *Masdevallia ventricularia* var. *brevicaudata* Kraenzl., *Repert. Spec. Nov. Regni Veg. Beih.* 34: 19, 1925.

Ety.: From the Latin *brevicaudatus*, "short-tailed," referring to the short sepaline tails as compared to the extremely long tails of specimens from Colombia.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1-2 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, 5-9 cm long including the 2.5-3.5 cm long petiole, the blade narrowly elliptical-ovate, obtuse, 1.4-1.8 cm wide, gradually narrowed below into the petiole. **Inflorescence** a solitary, erect, tubular flower borne by a slender erect to suberect peduncle 3.5-6.5 cm long, with a bract above the base, from low on the ramicaul; floral bract 7-8 mm long; pedicel 11-14 mm long, ovary 5-6 mm long, yellow, speckled with purple; **sepals** red-purple or purple-brown, shortly to cellular-pubescent within above the middle, the dorsal sepal oblong, 20-24 mm long, 7-8 mm wide expanded, connate to the lateral sepals for 19-23 mm to create a cylindrical, ventricose, sepaline tube, constricted above the middle, the free portion triangular to transversely triangular, the obtuse apex abruptly contracted into a slender, orange tail 4-9 mm long, the lateral sepals 18-23 mm long, connate 16-20 mm into a lamina concave longitudinally, 6 mm deep, 3-4 mm wide unexpanded, the free portions triangular, acute, reflexed, contracted into tails 5-9 mm long; **petals** cream-colored, dotted and suffused with red, oblong, obtuse, 6 mm long, 2 mm wide, the labellar margin with a longitudinal callus ending in an acute, retrorse tooth above the base; **lip** red, dotted and suffused with red, oblong-ligulate, 7 mm long, 2 mm wide, the apex yellow, obtuse, the disc lightly sulcate, the base with lightly upcurved margins, subcordate, hinged on the end; **column** white, semiterete, 5 mm long, the foot 3 mm long with a short, incurved extension.

ECUADOR: **Pichincha**: Angue near Nanegal, alt. 6,000-7,000 ft, Feb., Mar., Sept. 1877, *F.C. Lehmann* 23 (Holotype: W, and holotype of var. *brevicaudata*: W); "W. Andes, on trees," 1857, *Jameson s.n.* (K, P); between Calacalí and Nanegal, alt. 1800-2000 m, 28 Nov. 1880 and 28 Feb. 1883, t. 274, *F.C. Lehmann* 321 (BM, BR, G, K, US); same area, Dec. 1975, collected by B. Malo, cultivated at Tarqui, 13 July 1977, *C. Luer* 1695 (SEL); west slope of Pichincha, alt. 2000 m, collected by A. Andreetta and A. Hirtz, cultivated at Paute, 24 May 1988, *C. Luer* 13661 (MO). **Carchi**: east of pass east of Maldonado, alt. 2300 m, 17 Mar. 1991, *C. Luer, J. Luer, J. Del Hierro, A. & X. Hirtz* 15138 (MO); same area, alt. 2200 m, 25 Feb. 1992, *S. Dalström* 1572 (MO). COLOMBIA: **Antioquia**: Yarumal, near Estadero Ventanas, alt. 2000 m, 16 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague* 14209 (MO).



Masdevallia ventricularia, first discovered by Dr. Jameson of Quito, occurs in the forests of northwestern Ecuador and Colombia where it is relatively frequent. It is characterized by a small, solitary, erect, reddish brown, tubular flower, ventricose near or below the middle and constricted between the ventricosity and the orifice of the tube. The free parts of the sepals are broadly triangular, each terminated by a tail considerably shorter than the sepaline tube.

Masdevallia ventricularia is closely related to the Colombian *M. filaria* and *M. saltatrix*, which are readily distinguished by their larger size, colorful sepaline tube, and slender, recurved, sepaline tails as long as or longer than the sepaline tube.

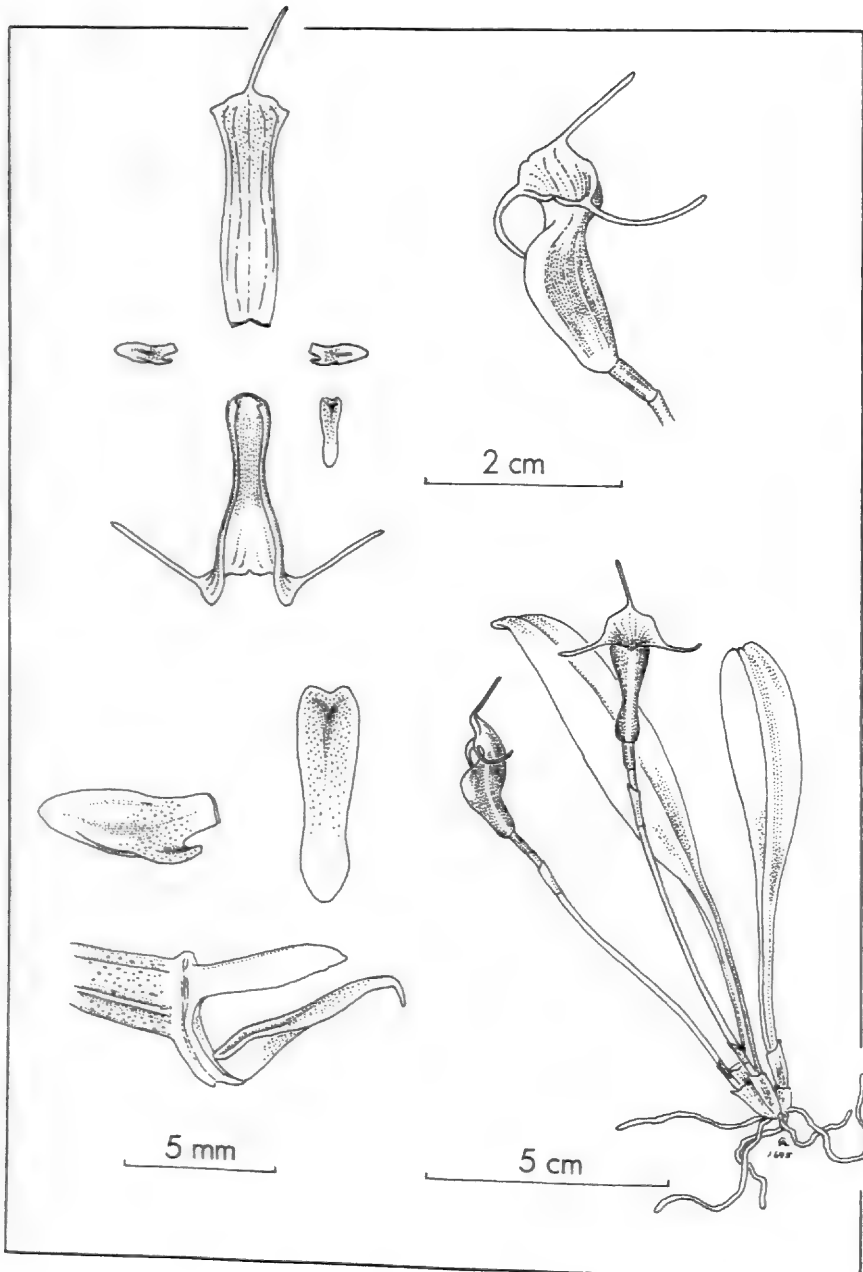


Plate 531. *Masdevallia ventricularia*



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